

**Army Regulation 750-1**

**Maintenance of Supplies and Equipment**

# **Army Materiel Maintenance Policy**

**Headquarters  
Department of the Army  
Washington, DC  
18 August 2003**

**UNCLASSIFIED**

# ***SUMMARY of CHANGE***

AR 750-1

Army Materiel Maintenance Policy

This revision--

- o Incorporates Army Regulation 750-2, which has been superseded.
- o Implements Defense Reform Initiative Decision 54 on customer wait time (chap 3).
- o Revises the Army Maintenance Standard (para 3-2).
- o Establishes new policy on programming resources to support maintenance operations, including contract logistics support or modification table of organization and equipment organizations (para 3-3).
- o Revises policy on Army central archiving of maintenance records in the work order logistics file of the logistics integrated database (paras 3-5 and 4-14).
- o Defines steam-cleaning requirements (para 3-12).
- o Revises policy on the turn-in of unserviceable, repairable items (para 3-12).
- o Names Commander, U.S. Army Materiel Command as the National Maintenance Manager (emerging) (para 3-13).
- o Changes specialized repair activity language to specialized repair authority (para 3-18) and aligns policy with the National Maintenance Program (para 7-13).
- o Adds new modification language and aligns with AR 750-10 (chap 4).
- o Changes gun tube effective full coverage requirement (remaining tube life) for items transferring into prepositioned stocks or out of the Army depot system from 75 rounds to 500 rounds. All other transfers remain at 75 rounds (para 4-6).
- o Revises maintenance management systems policy bases on the introduction and use of Standard Army Management Information System (paras 4-13 and 4-14).
- o Revises work order logistics file policy (para 4-14).
- o Modifies policy on contractors on the battlefield (paras 4-19, 6-4, and 6-5).
- o Revises intelligence and electronic warfare maintenance polices (chap 5, sec III).

- o Revises interactive electronic technical manuals policy (para 6-11).
- o Revises sample data collection policy; changes Army lead organization (para 7-4).
- o Revises Army Modification Program policy (para 7-5).
- o Clarifies operational readiness float/repair cycle float policy (para 7-6).
- o Adds National Tire Retread Program responsibilities (para 7-11).
- o Changes policy on maintenance of pneumatic tires (para 7-11).
- o Revises Army maintenance assistance and instruction team policy (para 7-14).
- o Adds Ground Safety Notification System details (para 7-16).
- o Adds maintenance advisory message details (para 7-17).
- o Adds specific details on depot maintenance policy (chap 8).
- o Establishes workload to be either overhauled or rebuilt (chap 8).
- o Defines Depot Maintenance Corporate Board (para 8-1).
- o Defines depot maintenance core requirement (para 8-1).
- o Adds reporting requirements on depot workload (para 8-9).

## Maintenance of Supplies and Equipment


### Army Materiel Maintenance Policy

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By order of the Secretary of the Army:

PETER J. SCHOOMAKER  
*General, United States Army*  
*Chief of Staff*

Official:



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

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**History.** This publication is a major revision.

**Summary.** This regulation is a consolidation of two publications that covered Army materiel maintenance and depot activities, AR 750-1 and AR 750-2. This regulation covers Department of the Army policy for general maintenance operations, commodity-oriented maintenance operations, maintenance management systems, inter-Service and contract maintenance

support, wholesale maintenance, maintenance support during acquisition, maintenance programs, and depot maintenance.

**Applicability.** This regulation applies to the Active Army, the Army National Guard of the United States/Army National Guard, and the U.S. Army Reserve. This regulation is applicable during full mobilization.

**Proponent and exception authority.** The proponent of this regulation is the Deputy Chief of Staff, G-4. The Deputy Chief of Staff, G-4 has the authority to approve exceptions to this regulation that are consistent with controlling law and regulation. The Deputy Chief of Staff, G-4 may delegate this approval authority, in writing, to a division chief within the proponent agency in the grade of colonel or the civilian equivalent.

**Army management control process.** This regulation contains management control provisions in accordance with AR 11-2 and identifies key management controls that must be evaluated (see app G).

**Supplementation.** Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from the Deputy Chief

of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

**Suggested improvements.** Users are invited to send in comments and suggested improvements to this regulation. Internet users can submit their comments and suggested improvements through the electronic DA Form 2028 (Recommended Changes to Publications and Blank Forms) found within the individual Deputy Chief of Staff, G-4 regulation and pamphlet. Anyone without Internet access should submit their comments and suggested improvements on a DA Form 2028 directly to Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

**Distribution.** This publication is available in electronic media only and is intended for command levels A, B, C, D, and E for the Active Army, the Army National Guard of the United States/Army National Guard, and the U.S. Army Reserve.

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\*This regulation supersedes AR 750-1, dated 1 July 1996, and AR 750-2, dated 27 October 1989, and rescinds DA Form 5797-R, dated Jun 1989.

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### **Glossary**



## **Chapter 1 Introduction**

### **1–1. Purpose**

*a.* This regulation establishes policies and assigns responsibilities for the maintenance of Army materiel. It provides and defines requirements for performance and management of the materiel maintenance function. It concerns unit, direct support (DS), general support (GS), and depot levels of the Army maintenance system and Army-wide program and commodity-unique maintenance. This regulation also applies to maintenance of all materiel owned or supported by the U.S. Army, except the following:

- (1) Materiel purchased with nonappropriated funds, special intelligence property administered per Army Regulation (AR) 381–143, real property, or foreign materiel used for training.
- (2) Leased/rented materiel, unless the lease/rental agreement dictates otherwise.
- (3) Those aspects of combat and materiel development that impact the materiel maintenance function.
- (4) Materiel maintenance as implemented in the AR 12–series publications.

*b.* The provisions of this regulation are applicable to all Army-funded property under the direct control of the U.S. Army Corps of Engineers. Civil-funded property under the control of the U.S. Army Corps of Engineers is exempt from the provisions of this regulation; however, these provisions may be used when considered to be in the best interest of the Government.

### **1–2. References**

Required and related publications and prescribed and referenced forms are listed in appendix A.

### **1–3. Explanation of abbreviations and terms**

Abbreviations and terms used in this publication are explained in the glossary.

### **1–4. Responsibilities**

Responsibilities are listed in chapter 2.

### **1–5. Exceptions**

A request for exception to any provision of this regulation will be submitted through command channels to DCS, G–4, ATTN: DALO–SMM, 500 Army Pentagon, Washington, DC 20310–0500, unless otherwise specified in this regulation. Requests for exception to policy specific to the Army National Guard (ARNG) will be submitted to the State Adjutant General, then through the Chief, National Guard Bureau (CNGB) to HQDA (DALO–SMM). All requests for exception to this regulation will, at a minimum, recommend alternative course(s) of action.

## **Chapter 2 Responsibilities**

### **2–1. Assistant Secretary of the Army (Financial Management & Comptroller)**

The Assistant Secretary of the Army (Financial Management & Comptroller) (ASA(FM&C)) will—

- a.* Develop and prescribe financial policy and procedures for the use of appropriated funds and nonappropriated maintenance funds.
- b.* Develop and prescribe financial policy and procedures for the use of depot maintenance funds.
- c.* Monitor the execution of depot maintenance funds.
- d.* Prepare, present, and defend the depot maintenance budget.
- e.* Participate in the program development process through membership in the Program Evaluation Group (PEG).
- f.* Provide representation, as the chief financial officer, to the Army Depot Maintenance Corporate Board (DMCB). (See para 2–4*r.*)

### **2–2. Assistant Secretary of the Army (Acquisition, Logistics, & Technology)**

The Assistant Secretary of the Army (Acquisition, Logistics, & Technology) (ASA(ALT)) will—

- a.* Be responsible for the acquisition function and acquisition management system of the Department of the Army (DA).
- b.* Co-chair the Army Systems Acquisition Review Council (ASARC).
- c.* Establish reliability, availability, and maintainability (RAM) exit criteria in system-specific acquisition decision memorandum (ADM).
- d.* Approve type classification of systems as part of the milestone III, full rate production, ADM per AR 70–1.

- e. Coordinate with the materiel developers (MATDEVs) to ensure that depot-level maintenance is planned and that the depot maintenance source of repair (SOR) analysis has been completed and documented.
- f. Ensure that an organic depot maintenance capability review is conducted for all newly acquired systems/modifications for systems designated as core.
- g. Provide representation, acquisition, and logistics to the Army DMCB. (See para 2-4r.)
- h. Develop Army policy for integrated logistics support (ILS).

### **2-3. Assistant Secretary of the Army (Manpower and Reserve Affairs)**

The Assistant Secretary of the Army (Manpower and Reserve Affairs) (ASA(M&RA)) will provide representation to the Army DMCB. (See para 2-4r.)

### **2-4. Deputy Chief of Staff, G-4**

The Deputy Chief of Staff, G-4 (DCS, G-4) is responsible for developing policies and implementing procedures for Army maintenance operations and will—

- a. Perform general staff supervision of maintenance activities, including active and reserve components.
- b. Serve as the proponent for the Department of Defense (DOD) inter-Service, interdepartmental, and interagency maintenance support programs within the Army.
- c. Serve as Army principal on the Defense Depot Maintenance Council (DDMC).
- d. Ensure the materiel readiness and sustainability of the U.S. Army.
- e. Formulate concepts, policies, plans, and program guidance for the following materiel maintenance programs:
  - (1) Specialized repair authority (SRA). (See para 3-18.)
  - (2) Maintenance assistance and instruction team (MAIT). (See para 7-14.)
  - (3) Sample data collection (SDC). (See para 7-4.)
  - (4) Maintenance float programs (operational readiness float (ORF) and repair cycle float (RCF)). (See para 7-6.)
  - (5) The Chief of Staff, Army Award for Maintenance Excellence (AAME) program. (See para 7-1a.)
  - (6) The Secretary of Defense Maintenance Award Program. (See para 7-1b.)
- f. Approve the establishment of installation materiel maintenance activities (IMMAs) per DA Pam 750-13.
- g. Serve as the proponent for the functional requirements for maintenance management Standard Army Management Information Systems (STAMIS) or other maintenance automated information systems (AIS) used to support Army maintenance programs.
- h. Provide final approval for funding of inter-Service support agreements (ISSAs) that exceed programmed support. (See para 4-28.)
- i. Represent the DA's Tire Retread Program in matters involving policy and planning that also concern DOD or the Departments of the Navy and Air Force.
- j. Develop basic functional guidance for the automated submission of depot maintenance requirements.
- k. Direct and allocate funds to support all sustainment maintenance programs, including maintenance engineering, maintenance support services, and depot-level maintenance.
- l. Establish sustainment maintenance requirements review boards consisting of representative members from the Deputy Chief of Staff, G-3 (DCS, G-3); ASA (FM&C), Army Budget Office; Director, Program Analysis and Evaluation (DPAE); Headquarters (HQ), U.S. Army Materiel Command (USAMC); and USAMC major subordinate commands (MSCs).
- m. Sponsor HQ, USAMC reviews (at least annually) for the purpose of validating and prioritizing maintenance requirements.
- n. Serve as the Headquarters, Department of the Army (HQDA) staff custodian of the Army Depot Maintenance Operational Plan (OP-29) database to validate accuracy and monitor execution.
- o. Direct the Army Materiel Maintenance Management Career Program.
- p. Exercise staff supervision for centralized program management of the Army Sets, Kits, Outfits, and Tools (SKOT) program. The outline guidance and procedures for acquisition, maintenance and disposition of SKOT are contained in DA Pam 700-60.
- q. Serve as proponent for the Army Modification Program per AR 750-10.
- r. Chair the Army DMCB. (See chap 8.)
- s. Sponsor and provide staff support to the Army Maintenance Board (AMB).

### **2-5. Deputy Chief of Staff, G-2**

The Deputy Chief of Staff, G-2 (DCS, G-2) will develop policies and procedures related to materiel maintenance of intelligence-unique materiel. (See AR 381-143.)

### **2-6. Deputy Chief of Staff, G-3**

The Deputy Chief of Staff, G-3 (DCS, G-3) will—

- a. Approve the Army force structure requirements and authorizations for maintenance support.
- b. Approve requirements and priorities for associated support items of equipment (ASIOE). (See AR 71–32.)
- c. Direct the coordination and use of operational test results in the development of force structure training and materiel requirements and authorizations.
- d. Develop DA policy and guidance on maintenance training.
- e. Participate in maintenance requirement reviews to ensure appropriate funding priority of weapon systems is maintained.
- f. Provide and regularly update the management decision package/modernization resource information submission crosswalk for intensively managed weapon systems.
- g. Provide representation to the Army DMCB.
- h. Ensure that peacetime maintenance man-hour shortfalls are identified and documented by the major Army commands (MACOMs) during the planning, programming, and budgeting process.

## **2–7. Deputy Chief of Staff, G–1**

The Deputy Chief of Staff, G–1 (DCS, G–1) will develop plans, policies, and programs for the management of military and civilian maintenance personnel.

## **2–8. The Director, DPAE**

The Director, DPAE will—

- a. Develop plans, policies, and procedures for building the maintenance input to the program objective memorandum (POM).
- b. Participate in annual maintenance requirement reviews to ensure maintenance funding and prioritization in compliance with programming goals and objectives.
- c. Provide representation to the Army DMCB.

## **2–9. Assistant Chief of Staff for Installation Management**

The Assistant Chief of Staff for Installation Management (ACSIM) will—

- a. Develop policies, plans, programs, and budgetary requirements for performance of maintenance on materiel used to accomplish the worldwide facilities engineering mission and maintenance support of nondeployable installation base operations (BASOPS) activities.
- b. Assist the materiel developer and service MACOMs in identifying requirements for, and the design and construction of, maintenance facilities.

## **2–10. The Surgeon General**

The Surgeon General (TSG) will—

- a. Develop concepts, policy, doctrine, and plans for maintenance of medical materiel.
- b. Develop medical force structures, organizations, and capabilities to provide required maintenance services for medical materiel.
- c. Develop, manage, and monitor medical materiel and maintenance programs for the Army.

## **2–11. Commanding General, U.S. Army Intelligence and Security Command**

The Commanding General (CG), U.S. Army Intelligence and Security Command (INSCOM) will operate and maintain assigned command-unique intelligence materiel through GS level.

## **2–12. Commanding General, U.S. Army Training and Doctrine Command**

The CG, U.S. Army Training and Doctrine Command (TRADOC) will—

- a. Execute assigned combat development mission.
- b. Develop Army maintenance concepts and doctrine for unit, DS, and GS levels of the Army Maintenance System in coordination with materiel developers and HQDA (DALO–SMM).
- c. Develop automated systems to support the Army Maintenance System.
- d. Evaluate fielded systems to update maintenance training for unit, DS, and GS levels of maintenance.
- e. Ensure that newly identified maintenance tasks are included in soldiers manuals.
- f. Ensure that training materials are developed to provide the training required supporting maintenance military occupational specialties (MOSSs).
- g. Ensure battlefield damage assessment and repair (BDAR) techniques are included in all resident maintenance training courses and doctrinal literature.
- h. Ensure operator- and leader-level preventive maintenance checks and services (PMCS) instruction is included in all resident training courses.

- i.* Develop and incorporate Army Oil Analysis Program (AOAP) instructions for appropriate programs of instruction. (See para 7–2.)
- j.* Develop and update concepts and doctrine for employing depot-level repair organizations in a theater of operations.
- k.* Represent SKOT users for all matters associated with the review and update of SKOT and corresponding supply catalogs.

### **2–13. Combat developers**

Combat developers (CBTDEVs) as identified in AR 700–127 will—

- a.* Include management and performance of the materiel maintenance function in the development of concepts, doctrine, materiel requirements, organizations, and management information systems.
- b.* Determine the maintenance impact of new materiel or concepts.
- c.* Assist in planning for logistics demonstrations and maintenance tests and conduct analyses of results.
- d.* Resolve critical issues related to reliability, availability, maintainability, and supportability.
- e.* Determine requirements, and develop the documentation for training devices.
- f.* Coordinate with MATDEVs to ensure materiel maintenance considerations are included in requirement documents.
- g.* Assist in maintenance test planning and conduct analyses of test results.
- h.* Determine skill requirements for BDAR and develop techniques and criteria for making repair/evacuation/mutilation decisions based on time limits and available skills.
- i.* Review all new and revised equipment technical publications, including maintenance allocation charts (MACs), before publication. (AR 25–30 provides guidance.)

### **2–14. Commanding General, U.S. Army Materiel Command**

The CG, USAMC, as the National Sustainment Maintenance Manager for the U.S. Army, will—

- a.* Develop Army depot-level maintenance concepts and support systems, with participation by HQDA (DALO–SMM), CBTDEVs, and MATDEVs.
- b.* Manage the depot maintenance system, including forward repair activities (FRA).
- c.* Establish and operate logistics assistance offices (LAOs) and manage the Logistics Assistance Program (LAP) per AR 700–4.
- d.* Ensure that spares and repair parts are available in sufficient quantities to support materiel throughout its life cycle.
- e.* Develop and operate a standard, integrated, and centralized maintenance management information system to provide multisource, multilevel equipment performance, maintenance, and logistics data in support of Army materiel development, improvement, management, and sustainment efforts.
- f.* Manage the AOAP.
- g.* Manage test, measurement, and diagnostic equipment (TMDE) functions as the Army lead organization. Manage and execute all responsibilities for worldwide calibration and repair of common and selected special purpose TMDE.
- h.* Manage the Army Warranty Program. (See AR 700–139.)
- i.* Manage the Army Chemical Agent Resistant Coating (CARC) and Camouflage Pattern Painting (CPP) programs.
- j.* Manage and staff requirements for the MAC.
- k.* Management and oversight of the SRA program.
- l.* Program and budget DA-approved SDC projects.
- m.* Manage the Depot Repair and Return Program. (See para 8–6.)
- n.* As the Army lead organization for the National Tire Retread Program, establish a worldwide program for management of aircraft and vehicle tires.
- o.* Provide life-cycle maintenance engineering support for materiel acquired by DA.
- p.* Develop and submit an Army business plan to the Joint Depot Maintenance Activity Group (JDMAG) for the Joint Depot Maintenance business profile that is provided to the DDMC. Maintain the DDMC business plan.
- q.* Develop and submit depot maintenance requirements (OP–29) to DCS, G–4.
- r.* Conduct maintenance requirements reviews with MSCs.
- s.* Perform initial provisioning in accordance with AR 700–18.
- t.* Manage the DOD inter-Service, interdepartmental, and interagency maintenance support programs within the Army.
- u.* Provide maintenance support to field-level units as necessary.
- v.* Manage the Army Corrosion Prevention and Control Program per AR 750–59.
- w.* Determine ORF and RCF factors and requirements (see AR 710–1) in coordination with the MATDEV and submit them to DCS, G–4, ATTN: DALO–SMM, 500 Army Pentagon, Washington, DC 20310–0500, for approval.

- x. Evaluate and resolve technical and maintenance problems reported by using units through deficiency reports.
- y. Manage and execute the National Maintenance Program (NMP).
- z. Manage and update SKOT. The outline guidance and procedures for acquisition, maintenance, and disposition of SKOT are contained in DA Pam 700–60.
  - aa. Establish theater foundation logistics support element (LSE) for coordination of USAMC maintenance support provided to the theater.
  - ab. Monitor compliance with depot maintenance core policy. Use DOD-approved methodology to determine core depot maintenance requirements to ensure Army depots maintain sufficient core capability.
  - ac. Provide two members to the Army DMCB; chief operating officer and one additional board member.
  - ad. Serve as a member of the HQDA AMB.

## **2–15. Materiel developers**

MATDEVs as identified in AR 700–127 will—

- a. Coordinate with CBTDEVs the materiel maintenance considerations to be included in requirement documents.
- b. Ensure that the materiel fielding plan meets the requirements of the Army maintenance system.
- c. Ensure that reliability, availability, and maintainability is included in design parameters and demonstrated during operational testing.
- d. Ensure that reliability centered maintenance (RCM) is a basic precept in developing the maintenance concept.
- e. Determine, in coordination with the designated MSC, the source of repair for depot-level maintenance (such as organic or contract).
- f. Ensure ILS/logistic support analysis (LSA) results are incorporated in initial maintenance planning/development concepts.
- g. Ensure that trained personnel, TMDE, facilities, specialized tools, support equipment, repair parts, and publications are available when the system is delivered to the user.
- h. Participate in planning and conducting logistics demonstrations and operational maintenance testing.
- i. Establish and monitor modification work order (MWO) programs per AR 750–10.
- j. Develop BDAR techniques, procedures, and related tool and materiel requirements in accordance with CBTDEV. The developers will also ensure BDAR concepts are incorporated into new materiel development.
- k. Develop factors for determining ORF requirements. These factors will be submitted to HQDA (DALO–SMM) for approval.
- l. Emphasize embedded diagnostics and embedded prognostics in the design, development, and improvement of equipment.
- m. Ensure that data collected from all levels of maintenance are analyzed and used for prognostic purposes.
- n. Ensure that equipment is designed with the need for a minimum number of common and special tools.
- o. Support the SDC program as required in paragraph 7–4.
- p. Establish and maintain an age exploration program.
- q. Include requirements for compliance with Federal environmental quality standards for equipment procured and supported by the Army (in accordance with AR 200–1).
- r. Provide qualitative and quantitative personnel requirement information and basis-of-issue plan (BOIP) feeder data to the CBTDEV to facilitate planning for distribution of operator and support personnel and support equipment.
- s. Implement the Manpower Requirements Criteria Program. (AR 71–32 provides guidance.)
- t. Ensure that modifications to Army equipment are applied and reported in accordance with AR 750–10.

## **2–16. Army commands (active component)**

- a. Major Army commanders will—
  - (1) Ensure that maintenance supports readiness. Commanders at all levels will be held accountable for the conduct of maintenance operations.
  - (2) Ensure evaluation of maintenance is included in the Command Inspection Program.
  - (3) Ensure that subordinate commanders comply with the policies in this regulation. One copy of any implementing instructions will be sent to Deputy Chief of Staff, G–4, ATTN: DALO–SMM, 500 Army Pentagon, Washington, DC 22310–0500.
  - (4) Ensure that maintenance operations at all levels within their command are properly supervised.
  - (5) Establish and supervise training programs for equipment operators/crews and maintenance personnel in the conduct of maintenance operations.
  - (6) Provide timely and accurate cost, readiness, and maintenance data to management systems.
  - (7) Acquire and maintain a self-sufficient military capability and capacity for unit, DS, and GS maintenance in support of combat, combat support, and combat service support elements.
  - (8) Program funds for unit, DS, and GS levels of maintenance and rank any unfinanced requirements.



(9) Ensure that maintenance is performed at the lowest level possible according to MACs. This process must preclude table of distribution and allowances (TDA) maintenance activities from absorbing maintenance workload that should be performed at modification table of organization and equipment (MTOE) unit, DS, and GS levels of maintenance.

(10) Minimize the number of TDA maintenance operations to reduce resource requirements without adversely impacting operational and contingency requirements. Ensure that there is only one IMMA on an installation. Installation commanders may consolidate Director of Logistics (DOL) and Director of Engineering and Housing (DEH) (or Director of Public Works (DPW)) maintenance operations when cost-effective.

(11) Evaluate all available methods of support before forwarding requests from subordinate commanders for establishment of IMMAs and satellite materiel maintenance activities (SMMAs). Examples of support methods are the IMMA Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA), ISSA, or contract. Submit requests to establish and discontinue IMMAs, SMMAs, and equipment maintenance missions (EMMs) to Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 22310-0500, per DA Pam 750-13.

(12) Comply with materiel maintenance standards and maintenance-related logistical performance and readiness standards.

(13) Coordinate all requirements for TMDE procurement with the PM TMDE per AR 750-43.

(14) Establish a warranty control office/officer to implement the Army Warranty Program per AR 700-139.

(15) Comply with all local, regional, and national regulations governing the inspection and maintenance requirements for prevention of pollution from mobile equipment. (AR 200-1 provides guidance.)

(16) Provide air traffic control materiel support.

(17) Establish an effective corrosion prevention and control program for assigned equipment per AR 750-59.

(18) Determine if reimbursement for fabrication services of DS, GS, or installation maintenance activities is authorized.

(19) Carry out quality programs under the provisions of AR 70-1 for assigned maintenance and calibration operations.

(20) Designate points of contact (POCs) for the SRA, SDC, MWO, AOAP, unique item tracking (UIT), and maintenance float programs.

(21) Assist executive agent and USAMC MSCs as required in establishing and conducting SDC projects that are implemented in the MACOM.

(22) Ensure subordinate commanders with sustainment maintenance missions comply with NMP business procedures when scheduling and executing sustainment maintenance operations.

(23) Ensure that support installations provide maintenance support to the U.S. Army Reserve (USAR) when required within the geographical boundaries established by AR 5-9.

*b.* Commander, U.S. Forces Command (FORSCOM) in support of the USAR will—

(1) Conduct a continuing analysis and evaluation of the USAR Materiel Maintenance Program to ensure that the objectives of the program are attained by all subordinate commands.

(2) Authorize resources to those TDA maintenance activities established by the U.S. Army Reserve Command (USARC) in the continental United States (CONUS) to support the USAR Materiel Maintenance Program. AR 570-4 will be used as a guide for determining manpower requirements of maintenance activities.

(3) Maintain Army BASOPS communications-electronics (CE) equipment; other assigned automation, communication, printing, audio-visual and records management equipment; and the Army portion of the Defense Communication System.

(4) Maintain information systems at INSCOM sites.

*c.* Commanders at all levels will—

(1) Emphasize the importance of safety and maintenance and ensure that subordinates are held accountable for the conduct of maintenance operations. Maintenance is a command responsibility.

(2) Provide leadership, technical supervision, and management control of materiel maintenance programs of subordinate commands and activities.

(3) Emphasize the conduct and supervision of PMCS performed at unit level. Materiel will be maintained at the maintenance standard specified in paragraph 3-2.

(4) Develop and sustain a high degree of maintenance discipline within their commands, including management of repair parts per AR 710-2.

(5) Establish, maintain, and conduct training of operators, crews, and maintenance personnel to properly use and maintain equipment.

(6) Establish, maintain, and conduct training of leaders at all levels to properly supervise maintenance operations and to motivate subordinates to properly and safely use and maintain equipment.

(7) Exercise management controls sufficient to ensure prudent and efficient use of all resources (people, money, materiel, and time) required to perform assigned maintenance missions.

- (8) Conduct inspections and staff visits to determine the adequacy of command maintenance operations. Document all faults to ensure that corrective actions are taken and to ensure the accuracy of readiness reports.
- (9) Provide materiel maintenance support to all assigned units and activities.
- (10) Recommend improvements to the Army maintenance system.
- (11) Comply with the provisions of AR 750-43 for all TMDE used in support of maintenance operations.
- (12) Ensure that the submissions of quality deficiency reports (QDRs) and equipment improvement recommendations (EIRs) are accomplished per DA Pam 738-750 (ground support and watercraft) or DA Pam 738-751 (aircraft/aviation equipment).
- (13) Encourage establishment of an aggressive awards program for operators and maintainers.
- (14) Implement an effective quality program per AR 70-1. Quality programs will be defined, quantified, specified, measured, and assessed.
- (15) Ensure that all unit-level PMCS, including all DS-level services, are scheduled and performed as required by the 10- and 20-series technical manuals (TMs).
- (16) Ensure prompt compliance with requirements dictated by safety-of-use messages in accordance with AR 750-6 and AR 95-1.
- (17) Ensure that sufficient numbers of personnel are trained in various BDAR skills so that combat resilience requirements can be met in wartime operations.
- (18) Support the SDC program, when implemented, by providing proponent agency contractor personnel reasonable access to equipment and data relevant to the SDC project.
- (19) Emphasize the prompt movement of unserviceable reparables to maintenance.
- (20) Appoint logistics readiness officers.
- (21) Support the implementation of the NMP.
- (22) Ensure modifications to assigned equipment are done in compliance with AR 750-10.

*d.* Installation commanders in support of the USAR will—

- (1) Provide DS, GS, and aviation intermediate maintenance (AVIM) as required for USAR units and maintenance activities located in the installation support area; in-house and contractor maintenance will be provided as stipulated in AR 5-9 and within this regulation.
- (2) Provide logistical support to USAR units during annual training (AT), as required.
- (3) Maintain an effective liaison program to the supported USAR maintenance activities, including ground, air, watercraft, rail, and water and petroleum within the logistical area of responsibility.
- (4) Provide for backup equipment recovery support from commercial sources through the efforts of the supporting installation. Costs will be provided through Operation and Maintenance, Army Reserve (OMAR) program elements.
- (5) Ensure compliance with NMP business procedures when scheduling and executing sustainment maintenance operations.

## **2-17. U.S. Army Reserve**

*a.* The Chief, Army Reserve will—

- (1) Develop materiel maintenance plans, policies, programs, and budgetary requirements pertaining to the USAR.
- (2) Manage the USAR Depot Maintenance Program.
- (3) Develop, program, budget, and defend depot maintenance requirements for USAR materiel.
- (4) Coordinate USAR depot maintenance requirements determination with USAMC MSCs to ensure USAR depot maintenance is programmed in depot-maintenance workload projections.
- (5) Coordinate all MOUs/MOAs involving depot maintenance of USAR materiel.
- (6) Develop a depot maintenance requirement determination process for USAR materiel consistent with policy and guidance in this regulation.
- (7) Provide representation to the Army DMCB.

*b.* The Commander, USARC will command USAR commands in CONUS and provide administrative, logistical, and technical assistance to OCONUS USAR units in support of Army materiel maintenance programs and will—

- (1) Ensure that maintenance supports readiness. Commanders at all levels will be held accountable for the conduct of maintenance operations.
- (2) Ensure evaluation of maintenance is included in the Command Inspection Program.
- (3) Ensure that any implementing instructions are sent to Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 22310-0500.
- (4) Ensure that maintenance operations at all levels within their command are properly supervised.
- (5) Establish and supervise training programs for equipment operators/crews and maintenance personnel in the conduct of maintenance operations.
- (6) Provide timely and accurate cost, readiness, and maintenance data to management systems.

- (7) Acquire and maintain a self-sufficient military capability and capacity for unit, DS, and GS maintenance in support of combat, combat support, and combat service support elements.
  - (8) Program funds for unit, DS, and GS levels of maintenance and rank any unfinanced requirements.
  - (9) Ensure that maintenance is performed at the lowest level possible according to MACs. This process must preclude TDA maintenance activities from absorbing maintenance workload that should be performed at MTOE unit, DS, and GS levels of maintenance.
  - (10) Minimize the number of TDA maintenance operations to reduce resource requirements without adversely impacting operational and contingency requirements. Ensure that there is only one IMMA on an installation. Installation commanders may consolidate DOL and DEH (or DPW) maintenance operations when cost-effective.
  - (11) Evaluate all available methods of providing maintenance support before forwarding requests to HQDA for the establishment of IMMAs. Consider the use of IMMA MOUs/MOAs, ISSA, and/or contract support. Submit requests to Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 22310-0500.
  - (12) Comply with materiel maintenance standards found in applicable technical publications and maintenance-related logistical performance and readiness standards found in this regulation and related publications.
  - (13) Coordinate all requirements for TMDE procurement with the U.S. Army Central TMDE Activity per AR 750-43.
  - (14) Establish a warranty control office/officer to implement the Army Warranty Program per AR 700-139.
  - (15) Comply with all local, regional, and national regulations governing the inspection and maintenance requirements for prevention of pollution from mobile equipment per AR 200-1.
  - (16) Provide air traffic control materiel support.
  - (17) Establish an effective corrosion prevention and control program for assigned equipment per AR 750-59.
  - (18) Determine if reimbursement for fabrication services of DS, GS, or installation maintenance activities is authorized.
  - (19) Carry out quality programs under the provisions of AR 70-1 for assigned maintenance and calibration operations.
  - (20) Designate POCs for the SRA, SDC, MWO, AOAP, UIT, and maintenance float programs.
  - (21) Assist SDC executive agent and USAMC MSC as required in establishing and conducting SDC projects that are implemented in the MACOM.
  - (22) Ensure that subordinate commanders with sustainment maintenance missions comply with NMP business procedures when scheduling and executing sustainment maintenance operations.
- c. USARC Regional Support Command commanders will—
- (1) Supervise maintenance functions of subordinate maintenance activities and provide maintenance support for USAR units and activities within their assigned areas.
  - (2) Ensure that USAR units under their command perform maximum maintenance within authorization and capabilities on issued or loaned equipment.
  - (3) Ensure that USAR DS, GS, and AVIM maintenance units are assigned support missions within existing capabilities and resources.
  - (4) Provide assistance to USAR units during AT, inactive duty training (IDT), or other scheduled training assemblies.
  - (5) Provide backup road service within capabilities of subordinate units/maintenance activities to USAR units in transit within their assigned area of responsibility.
  - (6) Coordinate with active component support facilities to mutually develop maintenance support and resource requirements.
  - (7) Establish procedures to—
    - (a) Monitor, measure, and control the performance of maintenance activities.
    - (b) Maximize the use of USAR table of organization and equipment (TOE) maintenance units to perform DS, GS, and AVIM maintenance consistent with their MTOE mission, training status, and capabilities.
  - (8) Provide maintenance support of USAR equipment within a prescribed area and develop and publish a USAR equipment maintenance support plan.
  - (9) Ensure that complete unit maintenance support, including scheduling and maintenance of equipment records, is provided to units that do not have a TOE unit maintenance capability. This does not include operator or crew maintenance unless adequately justified as an exception by the unit commander on a DA Form 2407 (Maintenance Request).
  - (10) Ensure that an effective maintenance training program is developed for each MTOE unit having organic unit or higher-level maintenance capability.
  - (11) Ensure that USAR maintenance support activities provide hands-on repair assistance during periods of IDT when requested by supported units. Administrative requirements such as prescribed load list (PLL) and technical assistance support will be provided by U.S. Army Regional Support Command staff.

(12) Manage a program to validate DA Form 2406 (Materiel Condition Status Report) through comparison with PMCS completed by unit personnel.

*d.* USAR organization/unit commanders will—

(1) Schedule adequate training, time, and resources for performance of preventive maintenance on assigned equipment. This will ensure the involvement of personnel available for training in, and the performance of, PMCS during each daily scheduled training assembly. Specific time will be included in the unit training schedule.

(2) Develop an operator training program and assign a licensed operator to each item of equipment.

(3) Schedule and supervise maintenance training.

(4) Be responsible for performance of all authorized maintenance on borrowed equipment. A unit's rating for AT will reflect any failure to complete unit maintenance before return of borrowed equipment.

## **2-18. The Army National Guard**

*a.* The CNGB will—

(1) Provide overall coordination and administration for developing materiel maintenance plans, programs, and budgetary requirements pertaining to the ARNG.

(2) Manage ARNG depot maintenance.

(3) Develop, program, budget, and defend depot maintenance requirements for ARNG materiel.

(4) Coordinate ARNG depot maintenance requirements determination with USAMC MSCs to ensure ARNG depot maintenance is programmed in depot maintenance workload projections.

(5) Be a party to all MOA/MOUs involving depot maintenance of ARNG materiel.

(6) Develop a depot maintenance requirement determination process for ARNG materiel.

(7) Provide representation to the Army DMCB and AMB.

*b.* The State adjutants general will—

(1) Direct and manage unit, DS, and GS maintenance operations applicable to all Federal supplies and equipment issued to ARNG units and activities within the State.

(2) Establish procedures to provide for timely maintenance and/or servicing of equipment.

(3) Establish a MAIT program as detailed in chapter 7.

(4) Ensure that commanders at company and higher levels appoint logistics readiness officers.

(5) Evacuate equipment and materiel requiring depot maintenance as directed by the CNGB.

(6) Establish unit maintenance facilities to provide support for home station equipment.

(7) Designate specific ARNG unit(s) to use and support an approved unit training equipment site (UTES) operation. This will include adjusting operating costs within and between using unit(s) for related maintenance and training.

(8) Designate type and quantity of home station equipment to be located at the UTES.

*c.* The surface maintenance manager (SMM) will—

(1) Plan, execute, and direct the Surface Maintenance Human Resources Program.

(2) Plan, develop, and manage in-State maintenance training; determine and coordinate out-of-State maintenance training.

(3) Implement and administer the safety, hazardous waste, and industrial hygiene programs for all surface maintenance facilities.

(4) Serve as the principal State adviser to the facilities management office on surface maintenance facilities construction.

(5) Analyze, coordinate, and manage on-hand equipment readiness for the State.

(6) Provide technical supervision to all surface maintenance activities and exercise operational and administrative control over combined support maintenance shops (CSMS), maneuver area training equipment sites (MATES), UTES, and organizational maintenance shops (OMS).

(7) Serve as the program manager for surface maintenance funds.

(8) Designate, in writing, an individual to assume temporary duty as acting CSMS, MATES, OMS, or UTES supervisor during temporary absence of the appointed shop supervisor.

(9) Manage the SMM office, providing control and direction for all matters relating to office administration.

(10) Ensure compliance with NMP business procedures when scheduling and executing sustainment maintenance operations.

*d.* The State Army Aviation Officer (SAAO) is a member of the State Adjutant General's staff and will—

(1) Implement and administer the State aviation logistics programs.

(2) Analyze, coordinate, and manage the operational readiness of aviation assets.

(3) Ensure the aviation logistics programs are in accordance with applicable materiel and maintenance regulatory requirements.

*e.* The Army Aviation Support Facility (AASF) commander is a member of the SAAO's staff and will—

(1) Supervise implementation of aviation logistics programs.

- (2) Maintain ARNG aviation assets at the DA readiness goals listed in AR 700–138.
- (3) Ensure compliance with safety-of-flight requirements and aircraft modifications.
- f. The State Aviation Maintenance Officer is a member of the AASF commander’s staff and will—
  - (1) Administer the ARNG Aviation Maintenance Program.
  - (2) Supervise ARNG maintenance and materiel technical personnel.
  - (3) Ensure logistics regulatory requirements are implemented and followed through the complete aviation cycle.
  - (4) Maintain ARNG aviation assets in the highest state of readiness.
  - (5) Report compliance with safety-of-flight requirements and aircraft modifications.
  - (6) Report deficiencies in quality, materiel, or maintenance per DA Pam 738–751.
- g. Commanders and supervisors responsible to the State Adjutant General will—
  - (1) Train personnel designated as operators and crewmembers to properly operate and perform PMCS on their assigned equipment.
  - (2) Assign maintenance responsibilities for unit equipment to specific individuals.
  - (3) Schedule maintenance time and give equal emphasis to preventive maintenance training.
  - (4) Require compliance with prescribed preventive maintenance procedures.
  - (5) Require that all equipment be maintained to the maintenance standard outlined in paragraph 3–2.
  - (6) Require that all before, during, and after operations checks be accomplished each time the equipment is operated or used.
  - (7) Submit DA Form 2404 (Equipment Inspection and Maintenance Worksheet), DA Form 2407, or electronic unit level logistics system (ULLS) DA Form 5988–E (Equipment Inspection/Maintenance Worksheet (Automated)) or electronic ULLS DA Form 5990–E (Maintenance Request), to the supporting maintenance facility for backup maintenance support beyond the unit’s capability. Electronic ULLS-generated forms will be the primary method used to transmit requests when the units have the capability.
  - (8) Maintain records applicable to hand receipt, operation, maintenance, modification materiel readiness reports, and transfer of equipment as prescribed in appropriate publications.
  - (9) Submit requests for replacement of basic issue items (BII), component of end items (COEI), initial troop installed and authorized (ITIA) items, and repair parts for equipment under their control.

## **Chapter 3 Maintenance Policies and Structure**

### **Section I Maintenance Policies**

#### **3–1. Overview**

a. Army maintenance is founded on the principle that the useful service life of Army equipment is achieved when the item is operated within its intended purpose and parameters and is maintained in accordance with its designed or engineered specifications. When an equipment item achieves its useful service life, the Army will use acquisition or recapitalization to replace or renew service life of the equipment. The Army relies on four core maintenance processes to manage equipment during the course of its useful service life to achieve a high state of readiness. They are performance observation, scheduled services, fault repair, and single-standard overhaul.

(1) Performance observation is the foundation of the Army maintenance program. Performance observation is the basis of the preventive maintenance checks and services known as PMCS that are required by all equipment TMs in the before, during, and after operation checks. Through observation, the operator documents observed performance against established standards and reports problems that degrade equipment before they become catastrophic. The 10– and 20–series TMs designate the standards for all equipment. This allows leaders the ability to designate the time and location of repair that saves precious manpower and materiel resources. It is also the most effective method of managing a large fleet of equipment when time and labor are limited and distances between support and the supported equipment are great. The Army will automate the recording and transmitting of PMCS data, which are appropriately captured by operator observation and embedded sensors to conduct diagnostics or prognostics.

(2) Scheduled services are specified maintenance actions performed at specific intervals when equipment, components, and systems are routinely checked, adjusted, changed, analyzed, lubed, and so forth, in accordance with the designers and engineers specifications. The Army uses scheduled services to focus manpower resources on equipment to maintain its operational and useful service life. Services on equipment include more than the application of a lubrication order or performance of service tasks. They include repair of faults and deficiencies as determined by performance observations, system and component checks, and analysis and updates. Maintenance personnel should use scheduled services to replace faulty items or projected component failures based on analysis, engineering documentation, and so forth. This will result in a higher level of reliability in combat and is more cost effective. The Army

leverages scheduled service time to maintain equipment service life and increase readiness. This supports wartime readiness and training.

(3) Fault repair is the process taken by operators and maintenance personnel to repair an equipment item, restoring it to full functionality as originally designed or engineered. Faults include deficiencies and shortcomings. The Army uses trained personnel, TMDE, technical information, and tools to accomplish this process. Fault repair is based on a mechanic/technician accurately diagnosing all equipment, component, assembly, and subassembly malfunction the first time, ordering the correct repair parts, and applying them immediately. The Army prioritizes repair of deficiencies based upon criticality. The goal of the Army is to correct all deficiencies and shortcomings as they occur. The correction of all faults, deficiencies, and shortcomings as established by Army TMs is the basis for the Army standard.

(4) Single-standard overhaul is a repair process that seeks to ensure a single repair standard is applied to all secondary items and components for all class IX components repaired and returned to supply. This process ensures common component quality and predictable service life using the best technical standard. This ensures that users do not waste manpower resources troubleshooting failures and replacing components needlessly. For specific guidance on single standard repair, see paragraph 7–13.

b. To meet its transformation objectives, the Army is developing an emerging maintenance policy for reducing the forward deployed logistics footprint. This emerging “replace forward, repair rear” policy will replace the Army’s current “fix forward” policy for future Army units. This policy is required to sustain future combat units at high levels of mission readiness while having a smaller logistics footprint in forward areas. Additionally, given the continuing merger of what we know today as “organizational” and “direct support” maintenance as is evident in the design of force twenty-one (FXXI) and striker brigade combat team units, and the emergence of an NMM for all component repair at installation/theater and depot level, the Army is examining the elimination of our current four-level maintenance system in favor of a more-simplified two-level maintenance system.

c. The Army allocates resources to commanders to maintain its equipment at prescribed readiness levels. Commanders apply manpower and equipment resources, allocated dollars, and The Army Maintenance Management System (TAMMS) to perform maintenance on Army equipment. When resources are allocated and applied correctly, unit commanders will realize the useful service life of their equipment and achieve prescribed readiness levels.

### **3–2. The Army maintenance standard**

a. The Army has one maintenance standard. Army equipment meets the maintenance standard when the following conditions exist:

- (1) The equipment is fully mission capable (FMC).
- (2) All faults are identified following prescribed intervals using the “items to be checked” column of the applicable TM 10– and 20–series PMCS table. Aviation faults are determined by using the aircraft preventive maintenance inspection and service (PMIS) per TM 1–1500–328–23.
- (3) All repairs, services, and other related work that will correct unit-level equipment/materiel faults for which the required parts/supplies are available have been completed in accordance with DA Pam 738–750 or DA Pam 738–751.
- (4) Parts and supplies required to complete the corrective actions, but which are not available in the unit, are on a valid funded requisition in accordance with AR 710–2.
- (5) Corrective actions that are not authorized at unit level by the MAC must be on a valid DS maintenance request (DA Form 2407/5990–E).
- (6) Scheduled services are performed at the service interval required by the applicable technical publication. Due to competing mission requirements, units are authorized a 10 percent variance when performing scheduled services. Procedures to apply this variance are found in DA Pam 738–750 for ground equipment and TM 1–1500–328–23 for aviation equipment. (afloat prepositioning ships (APS)–Afloat is excluded from this variance requirement.)
- (7) All emergency and urgent MWOs are applied to equipment in accordance with AR 750–10. In addition, actions required by one-time safety-of-use messages and emergency safety-of-flight messages are completed per AR 750–6 and AR 95–1.
- (8) All authorized BII and COEI are present and serviceable or on a valid supply request. For aircraft, all authorized flyaway items and items listed on the aircraft inventory master guide are present and serviceable or on a valid supply request.

b. The maintenance standard is based on TM 10– and 20–series PMCS.

c. The Army maintenance standard applies to all equipment except equipment used as training aids that require frequent disassembly and assembly.

d. Proper use, care, handling, and conservation of materiel per applicable technical publication are mandatory.

### **3–3. Total logistics response time and maintenance turnaround time**

a. All Army MTOE, TDA, and contract maintenance operations will provide maintenance services within the timeframe required by requesting organization commanders. The time required for maintenance organizations to respond to user organization requests for maintenance services will be determined and assigned by following the policy

on maintenance priorities outlined in paragraph 3–7. Commanders will use the following metrics to ensure compliance with this policy:

(1) *Total logistics response time (TLRT)*. (See fig 3–1.) This is the period of time that elapses between the time an item of equipment or component becomes unserviceable and the time that the item or component is returned to serviceability status after receiving requested maintenance services. The item or component may undergo some or all of the status changes as outlined in DA Pam 738–750, table B–21. Customer wait time (CWT) is a DOD-wide and Army-wide metric that recognizes that war-fighter-support requirements have the highest priority.

(2) *Turnaround time (TAT)*. This is the period of time that elapses between the time that a maintenance organization accepts a unit/organization work order, followed by accomplishment of the work, and the time at closeout of the work order.

*b.* Army maintenance organizations will take steps to minimize TAT and provide assistance to supported organizations so that their overall CWT is minimized.

*c.* The USAMC Logistics Support Activity (LOGSA) will extract the following maintenance TLRT and TAT historical information from the work order logistics file (WOLF) and maintain historical status in the logistics integrated database (LIDB):

(1) TLRT time status.

(2) MTOE TLRT status.

(3) TDA TLRT status.

(4) Contractor TLRT status.

*(a)* TAT status.

*(b)* MTOE maintenance organization TAT. (See fig 3–2.)

*(c)* TDA maintenance organization TAT. (See fig 3–3.)

*(d)* Contractor maintenance organization TAT. (See fig 3–4.)

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**Total Logistics Response Time–Maintenance (LRT–M) Status Report  
(MTOE, TDA, and Non-Government Customer Organizations)**

UIC WXXXXX

**LRT–M Report Description and Instructions**

LRT–M metric = customer response time (CRT) + support maintenance turnaround time (TAT)

CRT = work order (WO) submission time and customer pick-up time

WO submission time = date NMC status reported on AMSS to date WO is accepted at DS maintenance

Customer pick-up time = date customer notified of WO completion to date customer returns item to FMC status on AMSS

TAT = Date of acceptance of customer WO to date services are completed and WO is closed

Army standard for LRT–M = CRT (3 days) + TAT standard for customer-assigned maintenance priority designator (MPD)

TAT standard for MPD 01–03 = 5 days

TAT standard for MPD 04–08 = 8 days

TAT standard for MPD 09–15 = 30 days

TAT standard for TAT longer than 30 days = Number of days between date of acceptance of the WO and the customer assigned required delivery date (RDD).

**LRT–M Report Data and Format**

Number of CWOs in period	Last Reporting Period:	Last Quarter:	Fiscal Year To Date:
Number of CWOs in period that met the Army Maintenance LRT–M standard	Last Reporting Period:	Last Quarter:	Fiscal Year To Date:
Number of CWOs in period that failed to meet the Army Maintenance LRT–M standard	Last Reporting Period:	Last Quarter:	Fiscal Year To Date:
Number of CWOs in period that failed to meet the Army Maintenance LRT–M standard because of excessive CRT	Last Reporting Period:	Last Quarter:	Fiscal Year To Date:
Number of CWOs in period that failed to meet the Army Maintenance LRT–M standard because of excessive TAT	Last Reporting Period:	Last Quarter:	Fiscal Year To Date:

Figure 3–1. Sample total logistics response time–maintenance status report

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**Maintenance Turnaround Time (TAT) Report: MTOE**

Force Tree Selected: STANDARD FORCE	From: 2000-11-01
MACOM: EUSA - EIGHTH US ARMY	To: 2000-12-05
Total Items Selected: (insert number)	Date Grouping Method: Yearly
Report: Maintenance Summary	UIC Type: Maintenance Organization
	Maintenance Unit Type: MTOE

**Total Number Of Closed Work Orders**

MACOM	Division	UIC	MATCAT4	# Work Orders	MPD 01-03	MPD 04-08	MPD 09-15	Other
EUSA	2nd Inf	All	All	86	22	30	20	14

**Number Of Work Orders Closed Within MPD Timeframe**

MATCAT4	# Work Orders	MPD 01-03	MPD 04-08	MPD 09-15	Other
All	82	20	28	20	14

Organizational rating (based on total work orders) : Green

**Ratings:**

Green: Percentage of work orders (WOs) closed within MPD timeframe equals 90% or greater

Amber: Percentage of WO's closed within MPD timeframe equals 70% to 89%

Red: Percentage of WO's closed within MPD timeframe equals 69% or lower

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**Figure 3-2. Sample MTOE maintenance organization turnaround time report**

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**Maintenance Turnaround Time (TAT) Report: TDA**

Force Tree Selected: STANDARD FORCE

From: 2000-11-01

MACOM: FORSCOM

To: 2000-12-05

Total Items Selected: (insert number)

Date Grouping Method: Yearly

Report: Maintenance Summary

UIC Type: Maintenance Organization

Maintenance Unit Type: TDA

**Total Number Of Closed Work Orders**

MACOM	Division	UIC	MATCAT4	# Work Orders	MPD 01-03	MPD 04-08	MPD 09-15	Other
FORSCOM	Wuv1C9	All	All	86	22	30	20	14

**Number Of Work Orders Closed Within MPD Timeframe**

MATCAT4	# Work Orders	MPD 01-03	MPD 04-08	MPD 09-15	Other
All	82	20	28	20	14

Organizational Rating (based on total work orders): Green

**Ratings:**

Green: Percentage of work orders (WOs) closed within MPD timeframe equals 90% or greater

Amber: Percentage of WOs closed within MPD timeframe equals 70% to 89%

Red: Percentage of WOs closed within MPD timeframe equals 69% or lower

Figure 3-3. Sample TDA maintenance organization turnaround time report

## Maintenance Turnaround Time (TAT) Report: Contractor

Force Tree Selected: STANDARD FORCE	From: 2000-11-01
MACOM: FORSCOM	To: 2000-12-05
Total Items Selected: (insert number)	Date Grouping Method: Yearly
Report: Maintenance Summary	UIC Type: Maintenance Organization
	Maintenance Unit Type: Contractor

### Total Number Of Closed Work Orders

MACOM	Division	UIC	MATCAT4	# Work Orders	MPD 01–03	MPD 04–08	MPD 09–15	Other
FORSCOM	Wuv1C9	All	All	86	22	30	20	14

### Number Of Work Orders Closed Within MPD Timeframe

MATCAT4	# Work Orders	MPD 01–03	MPD 04–08	MPD 09–15	Other
All	82	20	28	20	14

Organizational Rating (based on total work orders): Green

**Ratings:**

Green: Percentage of work orders (WOs) closed within MPD timeframe equals 90% or greater

Amber: Percentage of WO's closed within MPD timeframe equals 70% to 89%

Red: Percentage of WO's closed within MPD timeframe equals 69% or lower

Figure 3–4. Sample contractor maintenance organization turnaround time report

### 3–4. Maintenance resourcing

*a.* All Army organizations having the responsibility to maintain and repair equipment will be adequately equipped, staffed, and funded for that purpose. The Army Planning, Programming, Budgeting, and Execution System (PPBES) will be used to implement this policy. Staff advice and assistance in resource development for maintenance programs will be provided to MACOMs and the Army staff, HQDA (ARSTAF) by the Office of the Deputy Chief of Staff, G–4 (ODCS, G–4).

*b.* MTOE and deployable modification table of distribution and allowance (MTDA) organizations will be augmented in peacetime garrison operations when maintenance soldier availability of maintenance man-hours is less than the MTOE/MTDA projected wartime availability of maintenance man-hours. This policy is to ensure that MTOE equipment will always be ready to meet Army mission requirements. Augmentation will be programmed along with other training and operations resources under the staff supervision of ODCS, G–4. When MACOM commanders augment military organizations with contract logistics support, the methodology at appendix B will be used to compute requirements. MACOM commanders will ensure that assigned/attached maintenance soldier personnel are used in maintenance operations at the minimum rate of 50 percent of total soldier available time. All MSC commanders operating under the Standard Army Maintenance System (SAMS) have the responsibility to include accurate monthly man-hour utilization rates in their quarterly command review and analysis or similar performance-monitoring program.

*c.* Resource requirements to support active Army and reserve component (RC) installations and nondeployable TDA

organizations, including their maintenance operations, will be programmed and submitted in POM packages to HQDA in accordance with the HQDA Resource Formulation Guide.

### **3-5. Maintenance records**

*a.* Accuracy and completeness of records are fundamental to the ability of the Army to manage maintenance programs. Commanders will assure that records of maintenance operations are accurate and complete. Resource requirements submitted in accordance with paragraph 3-3 will be based upon command historical records and such Army information resources as the LIDB and Operating and Support Management Information System (OSMIS). Records from such AIS as ULLS, SAMS, Global Combat Support System-Army (GCSS-A), Standard Depot System, or other HQDA-approved systems may also be used.

*b.* Historical records and other reports of maintenance operations will be promptly forwarded as required to information resources such as the LIDB in accordance with DA Pam 738-750 and DA Pam 738-751. (See para 4-14.)

*c.* Organizational and DS/GS maintenance information will be maintained and accessible from the WOLF module of LIDB and from other available database files. WOLF information will be made available to various users Army-wide for planning, programming, budgeting, program execution, and logistics management purposes. (See para 4-14 of this regulation for more information on WOLF.)

*d.* Historical information on depot maintenance operations will be archived by USAMC and provided on demand to appropriate users.

### **3-6. General policies**

*a.* An officer or civilian equivalent qualified in maintenance management will be appointed as maintenance officer, in writing, at each level of command. Maintenance officers will provide staff supervision of materiel maintenance operations within the organization. MTOE units that have insufficient officers for these duties may appoint a qualified noncommissioned officer as the maintenance officer.

*b.* Standing operating procedures (SOPs) will be established and maintained by all Army organizations and activities performing maintenance operations.

*c.* Maintenance support programs will be structured to meet materiel system readiness objectives as defined by AR 700-138.

*d.* Army design priorities in the development of new weapon and equipment end items include embedded diagnostics and prognostic capabilities, modular design, and replacement at the point of failure. The top design priority is the application of embedded diagnostics and prognostics. All Army program/project managers and materiel developers will assure that they include embedded diagnostics and prognostics on all new and upgraded weapon systems and coordinate this with the program manager TMDE. The Army will not field systems or upgrade equipment without embedded diagnostics and prognostics. Design features will minimize repair time and reduce operations and sustainability costs and the need for additional special tools by developing accurate first-time fault diagnosis and component replacement.

*e.* Repair will be done by replacing components at the point of failure, whenever possible, using the lowest level maintenance activity that has the capability and authority to perform the work.

*f.* Maintenance operations will be performed by military personnel in areas that are forward of the division rear boundary in deployed organizations except as outlined below. A workforce that is comprised of military, government civilian, and/or contractor maintenance organizations may perform maintenance operations that are in garrison locations.

(1) Contractor maintenance personnel will not be permanently stationed in areas forward of the division rear boundary. (Also see AR 715-9.) Contractor maintenance personnel may travel forward of the division rear boundary on a case-by-case basis, as approved by the responsible area commander, to provide temporary on-site maintenance support. Civilian maintenance personnel such as contractors, government employees, local nationals, and so forth, may be authorized by the theater commander to be stationed behind the division rear boundary after an appropriate risk assessment has been performed.

(2) In garrison locations, contractors and contracted maintenance services are authorized to supplement manpower shortfalls in MTOE organizational and DS/GS maintenance when commanders determine that their organic maintenance capability cannot perform to the required standard. Commanders will not augment maintenance operations at the expense of soldier readiness and proficiency in their MOS. MACOM commanders will address contract maintenance requirements during the planning, programming, and budgeting process as outlined in paragraph 3-4.

*g.* All Army maintenance operations will be conducted in accordance with the environmental security provisions of AR 200-1 and the underlying Federal, State, and local laws and directives. Commanders will aggressively support environmental protection programs and policies in their maintenance and supply operations. Commanders will use the DA standard environmental security AIS for hazardous materials and hazardous waste management to assist them in complying with Federal, State, and local environmental laws and regulations while accomplishing their maintenance support missions. Commanders desiring exemption to the requirement for use of the Army standard environmental security software must submit requests through their MACOM to HQDA, ATTN: OACSIM.

*h.* Commanders will establish policies for the evacuation of unserviceable equipment that are based, in part, on maintenance time standards and maintenance capabilities outlined in the MAC.

*i.* MACOM commanders may authorize the fabrication of repair parts and components based on valid supply requisitions that cannot be obtained through the supply system in time to meet the requester's RDD. Aircraft components that are critical to flight safety, and any other weapon system component designated as a safety related item, are not authorized to be fabricated. Fabrication of parts will not be made for the sole purpose of returning items to stock.

*j.* Modification or alteration of Army materiel is forbidden, except as authorized by AR 750-10. Modification of equipment outside of the factory must be accomplished via a documented, official MWO. Commanders will not allow their equipment to be modified except under the provisions of a valid MWO.

*k.* The Army will, to the maximum extent possible, use common maintenance terminology and data in maintenance management programs and literature.

(1) The Commander, TRADOC will ensure that doctrinal, training, and leader development literature keeps pace with approved maintenance management programs and terminology.

(2) HQDA (DALO-SM) will coordinate with the Office of the Secretary of Defense (OSD) and other military departments and Services to develop common maintenance management and logistics terminology for use in Army maintenance management documents.

*l.* All end items and class IX repairable items (Army master data file (AMDF) price greater than \$1,000) with a maintenance repair code MRC of F, H, D, or L will have a permanent serial number affixed to that item.

*m.* The serial number assigned to an item will not be changed, regardless of changes in configuration, without written approval by the applicable commodity command. Serial numbers are mandatory entries in the indicated data fields of all maintenance management forms.

*n.* TMDE will be calibrated per DA TMDE Calibration and Repair Support Program. (See AR 750-43 for detailed guidance.)

*o.* Quality control must be fully integrated into maintenance operations to ensure—

(1) The identification of equipment faults.

(2) Compliance with repair procedures and equipment standards contained in the TMs and equipment-specific publications.

### 3-7. Priorities

*a.* This policy outlines the assignment of maintenance priorities within TAMMS. Army maintenance tasks and operations will be conducted in established maintenance mission priority sequence, based ultimately upon the mission of the requesting organizations and the relevance and importance of the maintenance work that must be done. In the Army's overall logistics management system, relevance and importance are expressed as urgency of need. Requesting organization commanders will determine the appropriate maintenance priority on any work request, based upon the organizations urgency of need and urgency of need designator (UND). Once the UND has been selected, it will be used in table 3-1 to identify the correct maintenance priority designator (MPD). Table 3-2 indicates the Army maintenance TAT standard (upper limit) that is associated with the customer MPD that is entered on a work order.

**Table 3-1**  
**Priority designator (relating force/activity designator to urgency of need)**

Force activity designators (FADs)	Urgency of need designators (UND)		
	A	B	C
I	01	04	11
II	02	05	12
III	03	06	13
IV	07	09	14
V	08	10	15

**Table 3–2  
Maintenance priority designator and turnaround time standards**

MPD	TAT standard
01–03	5 days
04–08	8 days
09–15	30 days <sup>1</sup>

Notes:

<sup>1</sup> Customer organizations may specify a required delivery date that is longer than 30 days when mission schedules permit.

*b.* UND A will be assigned to unserviceable equipment under the following circumstances:

- (1) The unit/activity is unable to perform its assigned operational mission.
- (2) Materiel to be repaired is MTOE equipment that is reportable under AR 220–1 and TDA equipment that is reportable under AR 700–138 and listed on the current maintenance master data file (MMDF) received from LOGSA.
- (3) The unit/activity is unable to perform assigned training missions.
- (4) Repair of essential facilities of an industrial/production activity manufacturing, modifying, or maintaining mission-essential materiel is required.
- (5) The materiel is an intensively managed or critical item.

*c.* UND B is used in assignment of maintenance priorities for repair of materiel when—

(1) The unit/activity’s ability to perform its assigned operational mission is impaired. Without such materiel, the unit/activity may temporarily accomplish assigned missions, but at reduced effectiveness and efficiency below the level of acceptable readiness.

(2) The materiel is equipment readiness code (ERC)–A or ERC–B materiel and is not reportable under AR 220–1 or AR 700–138 or listed on the current MMDF (for example, not reportable on DA Form 2406, DA Form 3266–1 (Army Missile Materiel Readiness Report), or DA Form 1352 (Army Aircraft Inventory, Status, and Flying Time)).

(3) USAR and ARNG TDA maintenance activities are authorized to upgrade the UND when a not mission capable (NMC) deficiency is found. Only NMC parts are requisitioned when upgraded.

*d.* UND C is used in assignment of maintenance priorities for all other materiel not listed above, including ERC C materiel.

*e.* Maintenance units/activities manage repair of materiel by maintenance priority designator and analysis of impact on unit readiness. The usual sequence of work will be to repair the oldest job with the highest priority first. However, analysis of unit materiel readiness may dictate resequencing maintenance work.

*f.* As a general rule, an issue priority designator (IPD) used on a requisition perpetuates the maintenance priority designator assigned on DA Form 2407. AR 725–50 describes in detail supply priority designators.

### **3–8. Maintenance of low usage equipment**

*a.* Services for equipment that have accumulated or are anticipated to be less than 65 percent of the mileage/hours of operation specified in DA Pam 738–750, chapter 3, may have unit (20–series) and DS services (34–series) extended. Use of low-usage criteria does not relieve commanders of the responsibility for adequate maintenance of their equipment.

*b.* All service and lubrication tasks in the equipment’s 20– and 34–series TMs/lubrication orders (LOs) must be performed before the equipment is placed in low-usage status. The date, miles, kilometers, or hours when the equipment was placed into low-usage status will be entered on the DD Form 314 or ULLS-equivalent form.

*c.* Equipment that exceeds the specified criteria at any time during the year will be immediately returned to scheduled servicing at normal TM/LO intervals from the date and usage data that was entered in the DD Form 314 or electronic ULLS-equivalent form.

*d.* Servicing, evaluating, and exercising recoil mechanisms and gun tubes will be done per applicable technical bulletins (TBs) and TMs.

*e.* Communications and other subsystems mounted on equipment in low-usage status will be serviced when the primary system is serviced.

*f.* Low-usage equipment service standards do not apply to armament subsystems, equilibrating systems, fire control components, sighting components of combat vehicles and missile systems, and air traffic control equipment.

*g.* Operator/crew level (10–series) maintenance intervals in TMs/LOs will not be changed to low usage.

*h.* The AOAP schedule will not be extended.

*i.* Specific criteria for equipment being placed in a low-usage status are—

(1) Tactical vehicles and all trailers that have accumulated or are anticipated to accumulate less than 65 percent of the listed equipment utilization rate in accordance with DA Pam 738–750, chapter 3.

(2) Combat vehicles (except armament, equilibrating systems, fire control components, and sighting components), missile systems (except fire control components), material handling equipment, and construction equipment anticipated to accumulate less than 65 percent of the listed equipment utilization rate in accordance with DA Pam 738–750, chapter 3.

(3) Generators; pumps; air compressors; support equipment (reserve osmosis water purification unit (ROWPU), bath units, and so on); watercraft; rail equipment; power-driven nuclear, biological, chemical (NBC) equipment; engine driven heaters; and air conditioners anticipated to accumulate less than 75 hours in the current year.

(4) Communication equipment in communication shelters anticipated to accumulate less than 75 hours of operation in the current year. All remaining communications equipment, such as ground/vehicle mounted radios, switchboards, and so forth, will be serviced annually if they are anticipated to accumulate less than 75 hours of operation in the current year. Hours of operation are estimates only and are not intended to be formally tracked.

(5) Non-power-driven NBC equipment anticipated to accumulate less than 75 hours of operation in the current year.

(6) Tenting and canvas items, immersion heaters, field ranges, and space heaters or stoves that are not used will be erected or assembled annually.

(7) Small-arms and crew-served weapons (machine guns, mortars, and so forth) that are maintained in a humidity-controlled area and not removed (for any reason) at any time during the year will be serviced annually.

*j.* All equipment, except that stated in (6) and (7), above, will be inspected/exercised by operators semiannually. Inspection/exercise will include the following:

(1) Ensure that PMCS (through monthly) are being performed.

(2) Tactical vehicles and trailers and combat vehicles will be driven at least 5 miles to ensure mission capability. Mounted radios will have all PMCS (except semiannual and annual checks and services) performed per the communication equipment operator's TM.

(3) Construction, engineer, and materiel handling equipment, wreckers, and combat vehicles will be operated sufficiently to ensure hydraulic systems reach operating temperature and are mission capable.

(4) Generators, air compressors, support equipment, pumps, and power-driven NBC equipment will be operated for 30 minutes under load or 1 hour no load.

(5) Small-arms and crew-served weapons will be inspected, without leaving humidity-controlled room, for rust and corrosion. High-humidity-area inspections may be required more often.

(6) Visual inspections will be performed by the operator/crew to identify, report, or remove any new corrosion that may have formed.

### **3–9. Maintenance of medical material**

Maintenance policies, programs, and procedures unique to medical materiel will be maintained in accordance with AR 40–61.

### **3–10. Maintenance of consolidated express and military-owned demountable containers**

Consolidated express (CONEX) and military-owned demountable containers (MILVANs) are maintained within the capability of the using unit or activity. Additional maintenance policies are contained in DOD 4500.9–R, Part II.

### **3–11. Maintenance of facilities engineering equipment**

Maintenance policies and procedures unique to those non-type-classified and nonstandard items of equipment used by DEH or DPW personnel to accomplish their installation's facilities engineering mission are contained in AR 420–18.

### **3–12. Turn-in policy for serviceable excess and unserviceable repairable parts and components**

*a.* Unserviceable repairable items will be turned in to supporting supply support activities (SSAs) in an expeditious manner consistent with the cost of the items and their criticality to Army readiness programs.

*b.* All Army commanders and maintenance managers will ensure that critical items, intensively managed items, and automatic return items are returned to turn-in channels within the timeframes established by applicable directives and as required by AR 710–2 and AR 725–50. Commanders will use management information and reports from supply and maintenance management automated information systems, such as ULLS, SAMS, and Standard Army Retail Supply System (SARSS), to assist them in meeting the turn-in time standards.

(1) Using units will turn in unserviceable recoverable parts and assemblies to the supporting SSA within 72 hours of identification, classification, and/or removal from the end item. Serviceable excess will be turned in to the SSA within 72 hours of change to excess status. This policy implements provisions of AR 710–2 on disposal of materiel for the return of excess and not repairable this station (NRTS) repair parts to supply and maintenance channels.

(2) DS and GS organizations and activities will turn in serviceable excess and NRTS repairable items to the supporting SSA within 72 hours of completion of the maintenance tasks that removed the component from the end item and that classified the component as NRTS. This policy implements the provisions of AR 710–2 for excess serviceable and unserviceable items and applicable portions of AR 725–50.

*c.* Expedited local processing, cleaning, preservation, and preparation for shipment:

- (1) *Damaged items.* No damage statement will be required to turn in an item to the repairing facility.
  - (2) *Steam cleaning.* Steam cleaning of major assemblies and components will not be required at any level below installation and is not required at installation level for assemblies repaired at depot. Any cleaning to facilitate diagnosis or repair will be done in accordance with applicable environmental regulations. Steam cleaning, if required for overhaul/rebuild of the assembly, will be accomplished by the organization that performs this maintenance. The only authorized exception to this procedure is when steam cleaning is required to meet agricultural inspection standards.
  - (3) *Lubricants.* Lubricants will not be drained prior to turn-in. Exceptions include when a metal shipping container is not available and/or the major assembly cannot be otherwise safely transported to the repair location. If the repairing organization does not have sufficient approved capacity to collect and dispose of used lubricant, the supporting maintenance organization will be notified for disposition instructions.
  - (4) *Shipping.* Major assemblies and components will be shipped under transportation priorities applicable to the supply priority designators and procedures outlined in AR 725–50.
  - (5) *Packaging and preservation actions.* These will comply with AR 710–2.
  - (6) *Inspections.* After the initial inspection is performed by the supporting DS/GS maintenance activity, intermediate supply activities will not require additional classification inspections.
  - (7) *Movement and movement control.* Where possible, the major assembly or component will be shipped directly to the repairing activity. Only the associated documentation will be routed normally through appropriate supply and/or transportation management activities.
- d. The repairing activity will report any missing parts and damage-in-shipment discrepancies using established discrepant shipment procedures in AR 725–50. Other inconsistencies between the repairing facility’s classification inspection and the initial classification inspection will be reported back to the shipping organization commander.

## **Section II**

### **The Army Maintenance Structure**

#### **3–13. The Army maintenance system**

- a. The Army maintenance system is comprised of two management categories: field (tactical) and national (sustainment). The field category manages the unit and DS levels of maintenance activities conducting repair and return to user maintenance actions; the national level is composed of GS and depot levels supporting repair and return to stock activities. The CG, USAMC is the NMM and is fully responsible for national maintenance.
- b. Maintenance tasks will be performed in accordance with the MAC.

#### **3–14. Unit/organizational-level maintenance**

- a. Unit maintenance is the first and most-critical level of the Army maintenance system. It is the foundation of the maintenance system and requires continuous emphasis by all commanders. Commanders must establish a command climate that ensures that assigned equipment is maintained to the maintenance standard defined in paragraph 3–2. Commanders are responsible for providing resources, assigning responsibility, and training their soldiers to achieve this standard.
- b. The cornerstone of unit maintenance is the operator/crew performing PMCS from the applicable TM 10–series. The before- and during-PMCS checks concentrate on ensuring equipment is FMC.
  - (1) Faults detected during before-operations checks that make the equipment not FMC or violate a safety directive must be corrected before the mission.
  - (2) Faults detected during the mission affecting FMC must be corrected during the mission.
  - (3) Faults detected before or during the mission not affecting FMC may be corrected, if time permits, or recorded/reported for correction after the mission.
  - (4) After-operations checks detect faults resulting from the mission and ensure the identification and correction of faults to maintain the equipment to the maintenance standard.
- c. Unit mechanics will use the TM 10– and 20–series to identify and correct faults. The TM 20–series PMCS tables are used to perform scheduled PMCS services that sustain and extend the FMC time of the equipment.
- d. Maintenance operations normally assigned to unit maintenance include—
  - (1) Performance of PMCS.
  - (2) Inspections by sight and touch of external and other easily accessible components per the TM 10– and 20–series.
  - (3) Lubrication, cleaning (including corrective actions to repair corrosive damage), preserving (including spot painting), tightening, replacement, and minor adjustments authorized by the MAC.
  - (4) Diagnosis and fault isolation as authorized by the MAC.
  - (5) Replacement of unserviceable parts, modules, and assemblies as authorized by the MAC.
  - (6) Requisition, receipt, storage, and issue of repair parts.
  - (7) Verification of faults and level of repair of unserviceable materiel prior to evacuation.



- (8) Evacuation to the appropriate maintenance support activity of unserviceable reparables beyond the MAC authorization to correct/repair.
- (9) Recovery or transportation of equipment to and from the supporting maintenance activity.
- (10) Accomplishment of all tasks required by the AOAP.
- (11) Materiel readiness reporting per AR 700-138 and current MDMF.
- (12) Ensuring that TM 10- and 20-series level modification applications are properly coordinated with the Installation MWO coordinator in accordance with AR 750-10.
  - e.* Performance of unit-level maintenance will be documented using the automated forms and records in ULLS-ground (ULLS-G) and ULLS-aviation (ULLS-A) or AR 700-138, DA Pam 738-750, and DA Pam 738-751 for manual operations. This information is used to assist commanders in establishing, monitoring, and evaluating their maintenance program. In addition to the regulatory guidance in this publication, doctrinal and technical guidance for unit-level maintenance operations is found in DA Pam 750-35 and DA Pam 750-1.
  - f.* OMS in the ARNG will provide unit maintenance that is beyond the capabilities of owning units. Owing units will perform unit maintenance, including scheduled services, within the capability of the unit during IDT and AT periods. Unit commanders will advise supporting OMS forepersons of unit maintenance requirements that are beyond their unit's capability. OMSs will perform the following maintenance functions for surface equipment:
    - (1) Maintain liaison with supported unit commanders.
    - (2) Schedule maintenance services, when feasible, to coincide with quarterly and semiannual services.
    - (3) Service all equipment issued under warranty as specified in the manufacturer's service manual or materiel fielding plan.
    - (4) Maintain authorized repair parts and supplies when the PLL is located at the OMS.
    - (5) Furnish contact teams to perform unit maintenance and inspection when this is more economical than scheduling equipment into the shop.
    - (6) Provide backup unit maintenance that is beyond the capability of units using training sites.
    - (7) Provide administrative and operational control support for assigned unit assets, including readiness reporting to parent organizations.
    - (8) Perform DS maintenance when authorized by the SMM.
    - (9) Equipment evacuation is handled as follows:
      - (a) Process and evacuate equipment to consolidated maintenance centers (CSMs)/MATES, when required. Movement of this equipment will be supported by unit personnel.
      - (b) Movement of equipment to OMS requiring unit maintenance/repairs will be supported by unit personnel.
  - g.* The operation and supervision of an organizational maintenance sub-shop (OMSS) is the responsibility of the parent OMS.
  - h.* UTES in the ARNG is an activity authorized to perform in-storage unit maintenance and, when authorized by the SMM, limited DS maintenance. The UTES is under the control and supervision of the SMM. This activity will perform the following functions:
    - (1) Maintain and secure major items of equipment positioned at the UTES.
    - (2) Accomplish the required in-storage unit, and limited DS maintenance, on all organic and hand-receipted equipment positioned at the UTES.
    - (3) Maintain BII, COEI, and ITIA or an authorized or additional authorized list required by each owning unit for all major items of equipment positioned at the UTES.
    - (4) Requisition, stock, maintain, and issue unit-level class IX items in support of the equipment positioned at the UTES.
    - (5) Submit DA Form 2407 if using manual system, or DA Form 5990-E if using ULLS, to the combined support maintenance shop (CSMS) for all DS and GS maintenance requirements for organic and hand-receipt equipment positioned at the UTES. The UTES foreperson or a formally designated representative will sign each work order request submitted with a priority of 03 through 10.
    - (6) Submit feeder data via ULLS-G for each unit positioning equipment at the UTES per AR 700-138 current MDMF.
    - (7) Ensure that forms are completed per DA Pam 738-750 and are submitted to the property book officer and automatic data processing (ADP) activity.
  - i.* The MATES is an ARNG TDA maintenance facility which, when collocated with a CSMS, provides full-time unit-level support on ARNG equipment assigned to the site. When a MATES is not collocated with a CSMS, the MATES provides unit-, DS-, and GS-level support to assigned equipment and units. The MATES provides support in the conduct of maintenance training. MATES operations are outlined in National Guard Bureau (NGB) Pam 750-2.
  - j.* USAR maintenance activities have been established to perform unit-level maintenance, which is beyond the Army Reserve commander's capability or authorization to perform during scheduled training assemblies. Geographical support boundaries are assigned by the USARC. The maintenance activities are designated as (G) for ground support equipment, (W) for watercraft, or (G/W) for ground and watercraft.

k. Equipment concentration sites (ECS) have a maintenance branch with an area support mission and a storage branch for that equipment beyond the capability of the owning unit commander to store, maintain, or use at home station. Preference for storage location should be at unit's mobilization or annual training site to minimize transportation costs and time delays during mobilization.

l. Area maintenance support activities (AMSA) and ECS, with an assigned maintenance support mission for small arms, are authorized to perform maintenance support through the DS level. This support can be performed at the units home station using maintenance contact teams or at the AMSA/ECS when the small arms are evacuated to the AMSA/ECS by the owning unit.

m. Maintenance activities may be authorized by USARC to perform limited DS-level maintenance.

### **3-15. DS maintenance**

a. DS maintenance is characterized by—

- (1) One-stop service to supported units.
- (2) Highly mobile, weapon-system-oriented maintenance.
- (3) Backup support to unit-level maintenance.

b. Divisional maintenance units will support organic elements of the division. Attached units are required to coordinate with the parent units for support. Nondivisional maintenance units will provide support on an area basis as backup support to divisional DS units.

c. DS units may grant authority to supported units to perform the DS level of repair if the supported unit has the capability and capacity to perform the repair.

d. Nondivisional DS maintenance units may be assigned installation maintenance missions to ensure unit mission capability is maintained. These assignments will be approved and monitored by the installation materiel maintenance officer (IMMO).

e. MTOE DS maintenance personnel may perform duties of TDA maintenance activities to maintain skills and update MOS training.

f. All MTOE DS maintenance units will be provided adequate capability for furnishing on-site technical advice and maintenance support.

g. DS maintenance personnel will perform technical inspections of class II, VII, and IX materiel to determine serviceability and completeness.

h. DS units will be the primary reentry point for unserviceable repairable class IX materiel to the SSA.

i. Ensure that 30-series level modification applications are properly coordinated with the installation MWO coordinator in accordance with AR 750-10.

j. Operations assigned to DS units will normally include the following:

(1) Inspection of all items to—

(a) Verify serviceability of the item.

(b) Determine if unserviceable items were rendered unserviceable due to other than fair wear and tear. If negligence or willful misconduct is suspected, repair will not be made until a release statement is received per AR 735-5.

(c) Determine economic reparability of excess and accident-damaged equipment.

(2) Repair of unserviceable economically repairable end items per the maintenance expenditure limit (MEL). These will be repaired and returned to the user.

(3) Repair of all economically repairable components will return the items to a serviceable condition. These items will be repaired and returned to the requesting maintenance facility. Repair and return to supply will only be accomplished at the direction of the NMM.

(4) Provision of proactive materiel readiness and technical assistance of unit maintenance elements, including—

(a) Visits to supported units on a regular basis.

(b) Advice to supported units in proper methods for performing maintenance and related logistics support.

(c) Coordination with supported units to perform technical inspection when requested.

(d) On-site assistance to supported units.

(5) Diagnosis and isolation of materiel or module malfunctions, adjustment, and alignment of modules that can be readily completed with assigned tools and TMDE.

(6) Performance of light body repair, including straightening, welding, sanding, and painting of skirts, fenders, body, and hull sections when required to stop corrosion or retain structural integrity.

(7) Evacuation of economically repairable end items to designated maintenance facilities when repair is beyond authorized capability or capacity. Evacuation and return after repair will be through maintenance channels.

(8) Evacuation of maintenance repair code D, H, and L economically repairable components to the supporting supply activity if repairs are beyond MAC F-coded repairs.

(9) Evacuation of economically repairable components that can be returned to a serviceable condition using MAC F-level repair to designated maintenance facilities when repair is beyond capability or capacity. Evacuation and return after repair will be through maintenance channels.

(10) Providing backup DS maintenance support to other DS units and requesting backup support from other DS and GS units as required.

(11) Fabrication as identified by the appropriate TM.

k. The ARNG CSMS will perform DS and GS maintenance on all Federal surface equipment. The CSMS is under the control and supervision of the SMM and provides DS and GS maintenance to—

(1) Equipment prepositioned at a collocated MATES and/or UTES.

(2) Backup support to noncollocated MATES.

(3) Supported OMSs.

(4) Any DOD agency when authorized by CNGB.

l. USAR TDA maintenance activities are authorized to perform limited DS and GS maintenance as authorized by the USARC. The authorization is contingent upon availability of required resources and skilled personnel. An alternate DS activity within the geographic support area may be used when the activity backlog exceeds 21 days. If used, an installation support activity (ISA) or contract may be required. Components and/or end items requiring DS repair will be evacuated to the most cost-effective location for repair or replacement.

### **3-16. GS maintenance**

a. GS maintenance is characterized by—

(1) Commodity-oriented repair of components and end items in support of the NMP.

(2) Backup maintenance support to DS units.

(3) Job shop/bay or production line operations with the capability to task/organize to meet special mission requirements.

(4) Location at echelons above corps.

b. GS units may grant authority to supported units to perform the next-higher level of repair for repair and return to user only if the supported unit has the capability and capacity to perform the repair.

c. GS maintenance units will be assigned installation maintenance missions to ensure unit mission capability is maintained. These assignments will be approved and monitored by the IMMO.

d. MTOE GS maintenance personnel may perform duties at TDA maintenance activities to maintain skills and update MOS training.

e. All MTOE GS maintenance units will be provided adequate capability for furnishing on-site technical advice and maintenance support.

f. GS maintenance personnel will perform technical inspections of class II, VII, and IX materiel to determine serviceability and completeness.

g. Operations assigned to GS level will normally include—

(1) Diagnosis, isolation, and repair of faults within modules/components per the MAC. Components repaired and returned to stock will be repaired to the overhaul standard. Overhaul is defined as maintenance that restores equipment or components to a completely serviceable condition with a measurable (expected) life. This process involves inspection and diagnosis, according to the depot maintenance work requirements or similar technical directions, that identifies all components exhibiting wear and directs the replacement or adjustment of those items to original equipment specification.

(2) Performance of heavy body, hull, turret, and frame repair per the MAC.

(3) Area maintenance support, including technical assistance and on-site maintenance as required or requested.

(4) Collection and classification of class VII materiel (less aircraft, ammunition, missiles, and medical materiel) for proper disposition.

(5) Operation of cannibalization points, when authorized by MACOM commanders. (See AR 710-2.)

(6) Evacuation of unserviceable end items and components through the appropriate supply support activity.

(7) Fabrication or manufacture of repair parts, assemblies, components, jigs, and fixtures when approved by the MACOM commanders.

(8) Request for backup support as required.

(9) Assurance that TM 40-series level modification applications are properly coordinated with the installation MWO coordinator in accordance with AR 750-10.

### **3-17. TDA installation maintenance**

a. IMMAs will perform DS- and GS-level maintenance. IMMAs will also perform unit-level maintenance for MTOE units that do not have organic unit maintenance capability. Procedures for establishing, operating, transferring, or discontinuing IMMAs are in DA Pam 750-13.

b. IMMAs will not be work-loaded to the detriment of TOE and TDA units. This is to ensure that TOE DS and GS maintenance units maintain skill proficiencies and mission capabilities.

c. There is only one IMMA at an installation. IMMAs do not include—

(1) MTOE units.

- (2) Area maintenance and supply facilities (AMSF).
- (3) Communications security (COMSEC) communications logistics support facility (CLSF).
- (4) Regional training site-maintenance (RTSM).
- (5) MATES operated by the ARNG.
- (6) Maintenance activities operated by the Army Reserve.
- (7) Area maintenance facilities (AMFs).
- d. Installation commanders will appoint the IMMO on orders.
- e. The IMMO will review all installation maintenance activities on an annual basis to ensure continued effectiveness and economical support and recommend TDA maintenance consolidations, when required, through the chain of command.
- f. Operations assigned to an IMMA will normally include—
  - (1) Maintenance and issue of operational readiness float when the IMMA is assigned the mission.
  - (2) Operation of a cannibalization point.
  - (3) Maintenance technical assistance to supported units and activities.
  - (4) Maintenance of all materiel required to operate the installation.
- g. IMMAs must be readily expandable to support mobilization workloads and maintenance requirements when MTOE units are displaced or inactivated.
- h. Centralized maintenance production planning and control activities are established under the control of the IMMO.
- i. The DS and GS maintenance workload requirements that are beyond the IMMA's capability or capacity will be done by other DS or GS activities in the geographical support area. This workload will be accomplished on a reimbursable basis and may also be done by ISSA or contract. Contracts with commercial sources are administered per the forward repair activity (FAR).

### 3-18. Specialized repair authority

- a. A specialized repair authority is an authorization by HQ USAMC to perform specific MRC D and L repairs at GS level that will be valid for a period of 1 year. All work performed under the specialized repair authority will be directly funded with customer-level Operations and Maintenance, Army (OMA) funds for items repaired and returned to owning units. Work performed under the specialized repair authority on Army working capital fund (AWCF) components will be funded with AWCF funds.
- b. The Commander, HQ USAMC, as the NMM, will have the authority to approve or recommend disapproval of specialized repair authority requests submitted by the MACOMS. Approval authority may be delegated to the MSC commander as appropriate. Final disapproval authority will reside with DCS, G-4. The Commander, HQ USAMC will establish the business rules necessary to implement the specialized repair authority process.
- c. Requests for specialized repair authority approval will be submitted in the sample format at table 3-3.

**Table 3-3**  
**Sample format for a request for specialized repair authority authorization**

1. Unit identification code (UIC) of requesting activity/unit.
2. NSN of item.
3. Federal Logistic Record (FED LOG) source of supply code (B14, B16, and so forth).
4. Nomenclature.
5. End item application (end item code).
6. FED LOG maintenance repair code (D or L).
7. Repair of NSN. (List specific depot-level tasks proposed to be performed by the specialized repair authority.)
8. Skills, tools, TMDE, facilities, and publications on hand at the requesting unit. (If needed, add a continuation sheet.)
a. Skills (including certification for soldering).
b. Tools/equipment. (State if required or on hand.)
c. TMDE/test program set (TPS). (State if required or on hand.)
d. Facilities. (State if required or on hand.)
e. Publications.
9. Yearly number of items to be repaired.

**Table 3-3**

**Sample format for a request for specialized repair authority authorization—Continued**

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10. Cost-benefit analysis.
a. Buy costs (FED LOG price less turn-in credit).
b. Local repair costs.
(1) Direct labor hours (x rate).
(2) Indirect labor hours (x rate).
(3) Average parts cost (total per repair).
(4) Overhead costs (hours x rate).
c. Unit savings (a - b).
d. One-time start-up costs that are nonrecurring, including facilitation. (Amortize against item 9.)
e. Total estimated savings (item 10c x 9). (Instructions keyed to numbers on format.)
11. Readiness benefit.
12. Maintenance liaison engineer comments.
13. Prior one-time repairs.
14. Submitting activity POC.

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*d.* All specialized repair authority requests will be submitted through the appropriate MACOM headquarters through HQ USAMC (AMCLG-LMM) to the respective USAMC MSC identified as the agency responsible for management of the item for which the specialized repair authority is sought. The MSC commander will forward a recommendation to Commander, U.S. Army Material Command, ATTN: NMO, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001.

*e.* HQ USAMC will—

- (1) Ensure that the national stock number (NSN) is not excess to the national requirements objective (RO).
  - (2) To assist HQDA (DALO-SMM) in the approval/disapproval decision process, each specialized repair authority request forwarded for disapproval recommendation will have the following information:
    - (a) The national RO.
    - (b) Current depot program (maintenance activity and annual production requirements, year-to-date (YTD) production).
    - (c) Current NMP source of repair (maintenance activity/activities), annual production requirements, YTD production)
    - (d) The total number of unserviceable assets (wholesale and retail).
    - (e) The total number of serviceable assets (wholesale and retail).
    - (f) The number of issuable assets not in war reserves or programmed requirements.
    - (g) Any new or existing procurement actions, including delivery schedule.
    - (h) The average monthly demand for the item (wholesale and retail).
    - (i) Item manager's name and phone number.
  - (3) Ensure the requesting organization has the skills, equipment, and necessary facilities to conduct the requested repair.
  - (4) Maintain the specialized repair authority database, including the data identified in (2), above.
  - (5) Submit reports to HQDA (DALO-SMM) on a quarterly basis comprised of the data outlined in (2), above. Courtesy copies of the reports will be provided to the specialized repair authority's performing unit's MSC and MACOM. (Report control symbol (RCS) exempt per AR 335-15, para 5-2a(5).)
  - (6) Determine the amount of depot workload man-hours offset by all specialized repair authorities.
- f.* The MACOM specialized repair authority POC will report the following data to the NMM at HQ USAMC (AMCLG-LMM) on a quarterly basis (RCS exempt per AR 335-15, para 5-2a(5)):
- (1) Date repaired.
  - (2) Specialized repair authority number.
  - (3) Repaired component national item identification number (NIIN)/part number (where applicable) and serial number (where applicable).
  - (4) Parts replaced and associated cost.
  - (5) Labor hours and labor cost.
  - (6) Total cost.

- (7) Total man-hours and cost expended by DOD employees.
- (8) Total man-hours and costs expended by contractors.
- g. MACOMS are also required to provide, on a quarterly basis, the information listed in *e*, above, (less specialized repair authority number) for one-time repairs to HQ USAMC (AMCLG-LMM).
- h. The HQDA target for processing a specialized repair authority request is 60 days from receipt by the appropriate HQ USAMC MSC.

### **3-19. Authorization for ARNG maintenance facilities**

- a. Requests to establish surface maintenance facilities will be submitted to Headquarters, National Guard Bureau, ATTN: NGB-ARL-M, 111 South George Mason Dr., Arlington, VA 22204-1382, for approval. Requests to establish Army aviation activities will be in accordance with NGR 95-1 and submitted to Headquarters, National Guard Bureau, ATTN: NGB-AVN, 111 South George Mason Dr., Arlington, VA 22204-1382, for approval.
- b. These requests will include—
  - (1) List of units by TOE, authorized and on-hand equipment density to be supported, and the MTOE/TDA maintenance capabilities of the designated parent unit.
  - (2) How the facilities are acquired, leased, or licensed and the estimated cost.
  - (3) The annual cost, if the facility is leased.
  - (4) Renovation and/or rehabilitation costs that are required before occupancy.
  - (5) Estimated annual operations and maintenance cost of proposed facility.
  - (6) The effect that relocation will have on the technician workforce.
- c. Upon approval of a maintenance facility request, the State Adjutant General will publish a change to the State equipment maintenance support plan.
- d. NGB Pam 570-1 prescribes the manning criteria for maintenance activities.
- e. Criteria for the construction of maintenance facilities are prescribed in NGR 415-10.

### **3-20. Designation of parent units in the ARNG**

- a. The parent unit of a CSMS or support MATES is an ARNG MTOE unit that possesses a DS or GS maintenance capability. When the State troop structure does not provide a unit with the required MTOE maintenance capability, authority will be requested from the CNGB to modify the TDA to reflect the necessary maintenance capability. Where partial mobilization would have an adverse impact on the State, the adjutant general may request an exception to this policy from the CNGB.
- b. The parent unit of an Army aviation activity is the ARNG MTOE unit supported by the facility with the greatest aviation maintenance capability. NGB-AVN has determined total equipment requirements for Army aviation activities based on assigned missions. TDAs have been established that represent differences between equipment authorizations of the parent unit and equipment required to perform assigned missions.
- c. Requests to establish an OMS/UTES will include the following factors:
  - (1) Support to a minimum of three MTOE company-size units, or an equipment density of three work bays. A request to establish an OMS/UTES to support less than three units will include complete justification for the requirements and specify why the units cannot depend on existing facilities for support.
  - (2) Density and type of equipment to be supported.
  - (3) Availability of facilities and additional facilities required.
  - (4) Geographic location of proposed site for the facility in relation to units to be supported. Unit integrity is the primary consideration, but it is not intended that every battalion-size organization be supported by a separate OMS. The maintenance support plan can be developed to require dependent units to be supported by the OMS nearest the equipment requiring the maintenance support.
  - (5) The parent unit should be an MTOE unit having a unit maintenance capability; that is, battalion maintenance platoon, battalion maintenance section, or the maintenance sections of a separate company. If this is impractical, authority may be requested from the CNGB to assign another activity as parent unit. Unit maintenance tools and equipment that are not available in the approved TOE of the parent unit or other units supported by the OMS will be requested for inclusion on the State area command TDA.
  - (6) The OMS should be located at, or near, the parent unit armory.
- d. Upon approval by the CNGB, a State may be authorized an OMSS as follows:
  - (1) Authorization may be made for the specific purpose of supplementing available shop space of a parent OMS or an OMSS may be requested for NGB consideration when a unit is located an appreciable distance from the parent OMS.
  - (2) The OMSS will be designated with the parent OMS number and an alphabetic suffix; that is, the first sub-shop of OMS 3 will be designated 3A.
- e. Each State, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands will prepare and maintain a

current State surface equipment maintenance support plan located on the NGB Web site under Army research lab (ARL)-M.

### **Section III**

#### **Depot-Level and Acquisition Maintenance Policies**

##### **3-21. Depot-level maintenance**

*a.* Depot-level maintenance is characterized by the facilities, tools, machinery, TMDE, and technical manpower needed to execute the depot maintenance workload requirements generated throughout the life cycle of the mission-essential system and may be either organic or contractor. Depot maintenance supports Army readiness through overhaul and recapitalization of major items and overhaul of all class IX components for long-range cyclic requirements planning, mobilization surge demands during times of conflict, and short-term efforts.

*b.* Depot-level maintenance supports both the combat forces and the Army supply system as shown below.

(1) Depot-level maintenance will provide technical support and backup to DS and GS maintenance units. In overseas areas, a joint decision is required between the theater Army (TA) commander and CG, USAMC to determine the relationship of USAMC supply and maintenance activities with the theater commander in peacetime. In wartime and military operations other than war (MOOTW), the theater commander assumes control of depot-level maintenance operations in the theater of operations.

(2) Depot-level maintenance provides combat-ready materiel to the Army supply system in accordance with the priorities and requirements specified by DCS, G-3.

*c.* Depot-level maintenance will normally be performed by TDA industrial-type activities operated by the Army. Depot-level maintenance may also be performed by contract, ISA, and interdepartmental or interagency agreement.

*d.* An FRA is a USAMC-resourced, -directed, and -controlled activity operated by contractor or organic personnel that provides depot-level support forward of the depot. Where possible, FRAs will provide support for multiple weapon systems or commodities. The policies for depot repairable accountability (turn-in and requisition and Army working capitol fund) apply to FRAs.

*e.* All depot-level work, regardless of where it is performed, how it is funded, or whether it is organic or contractor-based work, will be reported to the ODCS, G-4 (DALO-SMM) on a quarterly basis. (RCS exempt: see AR 335-15, para 5-2e(1).) Information will be by quarter and will include specialized repair authorities, FRAs, NMP, and depots. The fourth-quarter report will provide a rollup of all funds executed both in the private and public sectors for the year. This report will be submitted by 1 December of each year.

##### **3-22. Materiel design, acquisition, and life-cycle support**

*a.* Equipment will be designed and developed to be supported within the Army maintenance system.

*b.* Maintenance planning and execution will be oriented toward the support of combat troops through the wholesale system with the prime purpose of sustaining materiel to the Army maintenance standard as defined in appropriate TMs.

*c.* Equipment will be designed to permit on-site repair, through component replacement, to the greatest extent possible with a minimum of manpower, skills, support equipment, and external TMDE.

*d.* Inter-Service and contract maintenance support, including life-cycle contractor support programs, will be planned and executed per this regulation.

*e.* Maintenance support will be structured on a weapon system and/or materiel end item basis and will conform to the Army maintenance system.

*f.* Maintenance management and planning will maximize consistency in maintenance support between similar types of materiel.

*g.* RCM, RAM, Manpower and Personnel Integration (MANPRINT), and BDAR will be an integral part of logistics support planning by wholesale maintenance activities.

*h.* Use of existing Army and other Service materiel and maintenance support structure will be stressed in the design and acquisition of the weapon system.

*i.* The top design priorities for supportability in the development or acquisition of new weapon systems and end items are:

(1) Modular design and discard at failure instead of repair when economically practical.

(2) Increase mean time between failure (MTBF).

(3) Reduce mean time to repair (MTTR).

(4) Minimize time to diagnose, fault isolate, and replace.

*j.* Embedded diagnostics, prognostics, and automatic identification technology (AIT) are the foundation of Army preventive and corrective maintenance in all Army equipment maintenance programs.

(1) TRADOC combat developers will require, through operational requirements documents (ORDs), that sensor-based embedded diagnostics and/or prognostic capabilities and AIT are designed into all new weapons/information systems and, where possible, existing systems. These technologies will be fully implemented in the following areas:

(a) Technical literature, including electronic technical manuals (ETMs) and interactive ETMs (IETMs), for the execution of field maintenance operations.

(b) Army doctrine and training for improved methods, procedures, and combat service support.

(c) Fleet life-cycle management and inventory management programs at USAMC national inventory control point (NICP) and its associated program management organizations.

(2) Materiel developers will ensure that embedded diagnostic and prognostic technologies and AIT are incorporated in design and development of new equipment and major weapon systems and upgrades of existing weapon systems and equipment end items.

k. Transportability/mobility will be included in the design and selection of any maintenance support equipment.

l. Information and reporting systems will be established to—

(1) Measure the effectiveness of materiel maintenance and management at all levels.

(2) Identify the frequency of materiel failures and effect corrective action.

(3) Develop maintenance support parameters for future materiel systems.

(4) Update the logistics database of the materiel proponent and other logistics planning elements of the Army.

(5) Compute initial repair parts required to support repair or overhaul programs for both contract and organic activities at retail and wholesale levels.

(6) Track materiel changes.

(7) Permit serial number tracking of selected parts, components, and end items.

m. Modification/modernization of equipment by wholesale maintenance activities will be performed and reported per AR 750–10.

n. Maximum repair cost or maximum permissible overhaul costs/MEL will be established by the appropriate materiel proponent for each materiel weapon system or equipment and its subsystems, assemblies, modules, and components.

o. Army depot maintenance capabilities and capacities will be developed within guidelines established by DOD Directive (DODD) 4151.18 to—

(1) Acquire and maintain suitable levels of technical competence.

(2) Execute the depot-level maintenance workload requirements for mission-essential weapons, systems, or equipment during the life cycle.

(3) Provide technical support to all echelons of maintenance below depot as needed.

(4) Provide for mobilization and surge requirements.

(5) Tailor FRA depot maintenance workload to a level of effort that best accommodates user needs for responsive logistics support on mission-critical systems and equipment.

p. Maintenance tooling, accessory shop materiel, machine tools, and TMDE will be modernized as cost effectiveness and the need for advanced technology dictate.

q. Acquisition, calibration, repair, and certification of TMDE will be accomplished per AR 750–43 and EM 0022 as part of wholesale maintenance support.

r. Use of U.S. Army-preferred TMDE will be stressed for all levels of maintenance during the design and acquisition phases of the materiel system. TMDE used to support materiel repair will be selected per AR 750–43.

s. Depot-level maintenance SOR analysis will be conducted and documented as part of the milestone II ASARC or equivalent review for acquisition category (ACAT) II and below programs for all newly acquired systems and modifications per AR 70–1.

t. An organic depot maintenance capability will be established for all newly acquired systems or modifications that have been designated as core within 4 years of initial operational capability date per AR 70–1. Core analysis procedures are outlined in paragraph E–2 of this regulation.

## **Chapter 4 Maintenance Operations**

### **Section I Materiel Repair and Evacuation**

#### **4–1. General**

a. Proper performance of PMCS by the equipment operator will ensure early detection of faults and need for required maintenance.

b. MACs specify what tasks can be performed at each level of maintenance.

c. To ensure the most cost-effective use of maintenance resources, the economic reparability of unserviceable



materiel will be determined by DS/GS/AVIM units per paragraph 4–5 prior to initiating any action to repair the materiel.

*d.* The decision to repair or evacuate materiel is based on the maintenance repair and recoverability codes, urgency of need, and mission, enemy, time, terrain, and troops-available (METTT) analysis.

*e.* Uneconomically repairable materiel will not be evacuated beyond the level authorized to dispose of or reuse the materiel.

*f.* All actions relative to the inspection, classification, verification, and disposition of uneconomically repairable materiel will be accomplished in an accurate and timely manner.

*g.* Materiel will be disposed of per AR 710–2.

#### **4–2. Unserviceable materiel**

*a.* Unserviceable end items that cannot be repaired promptly at unit level will be evacuated to the supporting maintenance activity, or turned in through the appropriate supply support activity.

*b.* DS and GS maintenance units will provide backup support to supported units.

*c.* Materiel will be protected (packaged/crated) to prevent further damage during evacuation. This includes all BII and components.

*d.* DS and GS maintenance units will promptly evacuate unserviceable materiel that they do not intend to repair in accordance with AR 710–2.

#### **4–3. Technical inspections**

*a.* A technical inspection (TI) will be performed prior to repair, evacuation, or turn-in of unserviceable end items or components. TIs are to be made by a technically qualified individual(s) who is assigned to a unit, DS, GS or installation-level maintenance activity. Inspections will be performed according to equipment maintenance and serviceability standards applicable to the maintenance level performing the repair. The results of the TIs are used to—

(1) Verify serviceability.

(2) Determine the economic reparability of the item.

(3) Determine the extent of maintenance effort and repair parts required to restore the item to the prescribed serviceable condition.

(4) Determine if unserviceable items were rendered unserviceable due to other than fair wear and tear.

(5) Determine estimated cost of damage (ECOD).

(6) Determine if all applicable MWOs have been applied.

*b.* TI sheets will accompany all requests for disposition to the NICP. An inspector, maintenance technician, or maintenance/motor officer as specified by the unit commander will verify each request. The TI sheet will accompany the full-time equivalent turn-in documentation to the managing NICP so that accurate disposition instructions can be provided about the major end item.

*c.* When a technical inspector at DS, GS, or installation maintenance levels detects damage to an end item/class IX component through other than fair wear and tear, this damage will be documented on DA Form 2404/DA Form 5988–E/DA Form 2408–13–3 (Aircraft Technical Inspection Worksheet). The inspector's rationale for this determination will also be included on the form. A copy of DA Form 2404/DA Form 5988–E will be forwarded to the battalion or equivalent level commander of the unit that ordered the work on or turned in the damaged end item/class IX component. The commander will determine if further action should be taken under the provisions of AR 735–5. Damaged property should be released for repair or turn-in as soon as the inspector has physically examined the damaged property; turn-in or repair of a damaged end item or component will not be started until AR 735–5 requirements are satisfied (see AR 735–5, para 13–29*c*).

*d.* When an owning unit suspects that damage to the end item/class IX component has been caused by negligence or willful misconduct, a work order for the component should be sent to the supporting maintenance activity for determination of ECOD. After completion of the ECOD, the end item/class IX component will be turned in or a work order for repair will be created as soon as possible, consistent with evidentiary requirements of AR 735–5.

*e.* When the TI supports an investigation of pecuniary liability and actual costs cannot be determined, inspectors will prepare an ECOD. Basic policy guidance for an ECOD in support of a report of survey is in AR 735–5.

*f.* DA Form 2404/DA Form 5988–E/DA Form 2408–13–3 will be used to record results of technical inspections.

#### **4–4. Verification inspections**

Verification inspections of major end items ensure the accuracy of a TI when it results in unserviceable, uneconomically repairable condition codes (CC) of H or P.

*a.* MACOM commanders without subordinate installations and installation commanders will—

(1) Ensure that technical inspections resulting in unserviceable, uneconomically repairable CCs of H or P are verified using independent inspections prior to requesting disposition instructions per AR 710–2. The individual performing the initial CC classification will not perform verification inspection.

(2) Ensure that inspectors conducting verification inspections are technically qualified in the equipment commodity they are inspecting.

b. The recording of a verification inspection will be done by typing or stamping a statement on the original inspection form. The required data elements are—

- (1) Organization of the verifying inspector.
- (2) Inspector's name and grade.
- (3) Date of inspection.
- (4) Signature of inspector.

c. Major end items with CC of H or P that fail a verification inspection will be referred to the maintenance officer with the corrected classification. The maintenance officer will determine further action required to repair the item.

#### **4-5. Maintenance expenditure limit**

a. MEL is the total acceptable one-time cost to repair an end item or reparable component to a fully serviceable condition as prescribed in the appropriate TM. Current MELs and MEL procedures are listed in the TB 43-0002-series and TB 750-series. The managing NICP should be contacted if unsure of the current MEL. There may be instances when the MEL for a major end item has changed, and the change has not yet posted in either TB 43-0002-series or the TB 750-series.

(1) MEL is used to ensure economic and operational effectiveness of Army maintenance at all levels. Depot-level assistance may be obtained through the LAO.

(2) Required repairs will not be broken into separate job estimates to bypass prescribed MELs.

b. MEL will be expressed as a percentage of the unit replacement price.

(1) MEL will be reviewed at least annually and updated as required.

(2) MELs will be established for all items except the following:

(a) Materiel procured with nonappropriated funds.

(b) Real property fixtures.

(c) Non-type-classified training devices used exclusively by training institutions and schools.

(d) Non-type-classified equipment and items of nonstandard materiel that do not require national-level wholesale materiel management or logistics support.

(e) Materiel exempt from type classification.

(f) Class V materiel.

c. Unit replacement price:

(1) For end items, the planning prices in the AMDF will be the source for the replacement price.

(2) The AMDF as published in FED LOG will be used to establish the replacement price for reparable components and repair parts.

d. Local/geographical costs will be used for overhead and labor costs.

e. MACOM commanders have one-time approval authority on requests for waiver of published MEL when the required maintenance can be accomplished at DS and GS levels of maintenance or by local contract. One-time approval authority is limited to a specific model or serial-numbered major end item. Only the appropriate NICP has the authority to issue fleet waivers. In approving such requests, commanders will ensure—

(1) A replacement item is not available by the RDD.

(2) Resources are available or can be made available to the requesting organization to do the repairs prior to the RDD.

(3) Requesting organizations submit a repair cost estimate and justification for retention.

f. The following direct costs will be used to determine repair cost estimates when faults are found during technical inspections:

(1) *Direct labor.* Direct labor is that labor (civilian or military) that can be specifically identified to the repair to be performed. Direct labor involves only personnel in direct productive contact with the item or service involved. This does not include initial inspection. To estimate direct labor costs, determine/estimate the direct labor man-hours required and multiply by the appropriate hourly labor rate.

(a) *Direct labor man-hours.* The determination of the direct labor man-hours to be applied will be based on working-hour requirements for maintenance tasks listed in applicable equipment publications; commercial flat-rate manuals, when appropriate; similar work performed previously; or individual experience. The direct labor man-hours will be periodically reviewed and updated, if necessary.

(b) *Civilian labor rates.* The cost of civilian labor will be based on a labor rate for the work center that will perform the work. The servicing finance and accounting office, whether determined from annual salaries or hourly wage rates, will provide labor rates.

(c) *Military labor rates.* Labor rates for military personnel will be the average military wage rate for the work center performing the work. The servicing finance and accounting office will provide these rates.

(d) *Established labor rates.* MACOM commanders and directors of agencies may establish and use standard hourly

rates for direct and indirect (or overhead) labor as long as such rates are consistent with DFAS-IN Regulation 37-1. When such standard rates are established, separate rates are established for each category of supportable materiel, commodity group of equipment, and weapon system. A separate standard labor rate will be established for each major geographical area where wage levels vary significantly.

(2) *Materiel.* The cost to repair includes all materiel, including procurement appropriations funded materiel, directly applied to the particular equipment-undergoing repair.

(a) The cost of consumable items received from the supply system may be set as billed by the supply agency. If no billing is available, the cost of consumables is set at the standard inventory price as published in appropriate supply manuals or FED LOG. Items procured from local sources are priced at the latest invoice cost. Cost of items fabricated will be based on actual cost, where possible. When actual cost is not available, engineering estimates, including indirect expenses, will be used.

(b) The cost of Government-furnished materiel expended by a contractor in performing all or part of the repair will be the standard inventory price.

(c) The cost of replacement components and assemblies used in the repair process will be set at the standard inventory price. Credit is taken for the return of the reparable component in an amount equal to the current standard inventory price less the estimated cost to repair the component.

(d) Freight will not be included as an element of cost when the equipment to be repaired is located in CONUS. When the equipment to be repaired is located overseas and no local capability to repair exists, the cost of freight to CONUS will be included as an element of cost. The cost of freight will include all transportation and handling costs from point of use to designated CONUS point of repair.

(e) When equipment cannot be repaired on-site and costs are incurred to prepare the equipment for shipment, such costs (including materiel) will be included in the estimate of cost to repair regardless of origin or destination.

g. Indirect costs to be included will be determined by applying the indirect or overhead rate (computed using DFAS-IN Regulation 37-1) to the estimated direct labor man-hours. The indirect expense rate will include the following:

(1) *Manufacture or production expenses.* These expenses are costs incurred within or identifiable to the maintenance shop or organization performing the repair work, although not identifiable to particular jobs.

(2) *General and administrative expenses.* These expenses are costs incurred in the general management or supervision of the installation as a whole that are allocated among maintenance and other activities.

h. Miscellaneous costs of repair will include all contractual services acquired incidental to, and identifiable with, the performance of all or a portion of the specific repair. All other costs required to accomplish the repair that are directly identifiable with the equipment will be included except those directly named in *j*, below.

i. Items of operating expense will include all scheduled and unscheduled services and repairs that are accomplished by the using organization, including repair parts. These costs will be included when the item being repaired is excess to unit needs, was damaged accidentally, or is repaired by higher-level maintenance on a nonreturn basis. (See exceptions in *j*, below.)

*j.* The following costs will not be included in the estimate of cost to repair:

(1) Replacement of basic issue list items.

(2) The labor cost of applying MWOs.

(3) The cost to overhaul or replace accessory items used to adapt equipment for special uses, including such items as rank insignia, winterization kits, flashing lights, two-way radios, tool kits, and similar items. Individual estimates to overhaul such items will be made as appropriate and required.

(4) Items of operating expense, when the item being repaired is not excess to unit needs, has not been accidentally damaged, or is repaired by higher-level maintenance on a return-to-user basis. Items of operating expense include all NSNs listed in the respective organization and support maintenance repair parts and special tools list (RPSTL).

(5) The cost to replace missing tools for those sets, kits, and outfits that are subject to MEL.

#### **4-6. Equipment transfer and turn-in**

a. All transfers and turn-ins must be formalized through an MOA between MACOMs. Equipment that is transferred between MACOMs—including Army Reserve and Army National Guard—transferred into Army prepositioned stocks, prepared for storage below wholesale level, and other specified stocks, will meet the following requirements:

(1) The maintenance standard as defined in paragraph 3-2.

(2) Scheduled services will be performed if 90 percent of service interval (using criteria outlined in applicable schedule) has expired as of the transfer date reflected in disposition instructions from the wholesale manager. The criteria for services of time are suspended during shipment and will resume upon acceptance at gaining site.

(3) Equipment to be transferred should be inspected by the losing command a minimum of 120 days prior to the transfer date, allowing parts to be requisitioned and received so that corrective actions can be completed prior to the acceptance inspection. Equipment being transferred should be inspected for acceptance by the receiving command or appropriate agency a minimum of 60 days prior to transfer date. This inspection serves as the final acceptance inspection and certifies that the item is at the maintenance standard or establishes corrective action required by the

losing MACOM unit before transfer. It also serves as a baseline for the verification of equipment condition at the receiving location. MACOMs and agencies are responsible for funding temporary duty (TDY) related to their responsibilities for inspections as outlined.

(4) The results of TM 10- and 20-series PMCS and PMIS acceptance inspections (record copy of DA Form 2404/DA Form 5988-E/DA Form 2408-13-3) and other records required by DA Pam 738-750 and DA Pam 738-751 will accompany the equipment.

(5) Gun tubes will have a minimum of 500 rounds of effective full charge (EFC) remaining when transferred into APS stocks. On transfers other than into Army war reserve stocks, gun tubes will have a minimum of 75 EFC rounds remaining.

(6) Equipment accepted for depot overhaul via the Combat Vehicle Evaluation (CVE) program or identified as a depot recapitalization candidate per MOA/mission training plan will not be directly transferred between MACOMs.

*b.* Equipment transfer between MACOMs in unit sets (force package fielding) will meet the following requirements in addition to those in *a.*, above:

(1) Requisitions for repair parts with estimated delivery dates past the transfer date will be canceled. Appropriate funds (price from current FED LOG) will be transferred to USAMC as specified in the MOA.

(2) Outstanding DS (or higher) maintenance requests that cannot be completed prior to transfer will—

*(a)* Require the gaining and losing MACOMs to negotiate an acceptable solution such as delayed transfer dates for specific pieces of equipment. Agreement requires concurrence of DCS, G-3.

*(b)* Be cancelled. Appropriate funds (current FED LOG price) will be transferred to USAMC as outlined in transfer MOA.

(3) MACOMs/agencies are responsible for funding TDY related to their responsibilities for transfers as outlined above.

*c.* USAMC responsibilities for unit set transfers between MACOMs are—

(1) Serve as arbitrator for inspections outlined in *a(3)*, above, unless USAMC is an active party in the transfer. In all matters concerning this type of transfer the arbitrator is DALO-SMM.

(2) Receive funds transferred from losing MACOMs as outlined in *b(2)(b)*, above.

(3) Perform corrective actions at the receiving/handoff site to ensure equipment is in the same condition as reflected by record copy of acceptance inspection required in *a(3)* and (4), above.

(4) Provide total package fielding support to gaining MACOM.

*d.* Equipment transferred between MACOMs in other than unit sets will meet the requirements in *b(2)(a)*, above. In addition, equipment will not be transferred until all corrective actions requiring parts are completed and DS and higher maintenance requests are completed.

*e.* MACOM commanders will establish the standard for materiel transferred between units within the MACOM, except for materiel being transferred within the MACOM from an active Army unit to a Reserve component; this materiel will be transferred in accordance with the requirements of *a.*, above. Use of TM 10- and 20-series PMCS maintenance standard is encouraged. MACOM commanders will provide necessary maintenance resources and assign responsibility for repair of materiel in the MACOM.

*f.* Equipment turn-in will be made in accordance with the applicable provisions of AR 710-2. The following special maintenance management provisions also apply:

(1) It is Army policy that equipment selected for repair in depot maintenance facilities arrive at the depot repair site in the same or better condition of serviceability as when originally selected (TI performed and recorded on DA Form 2404/DA Form 5988-E/DA Form 2408-13-3) for induction into depot maintenance programs. Commanders of USAMC MSCs will conduct depot maintenance evaluations and/or TIs and will use them for programming depot maintenance workloads and related purposes.

*(a)* Property book items and other end items of equipment that have been inspected, evaluated, and accepted as candidates for induction into USAMC depot maintenance programs will be promptly turned in to the supporting SSA.

*(b)* In cases where the depot candidate item cannot be promptly shipped to the depot repair site for immediate induction, the unit commander may retain custody and/or operational use of the accepted item. Some of these items may still be mission capable (MC). In all such cases, the owning/custodial commander will retain the induction candidate item at the same level of serviceability as specified on the depot evaluation/TI noted in (1), above. To ensure that these candidate items are in the same or better condition of serviceability, the equipment being turned in will be reinspected for acceptance by the receiving command, or appropriate agency, a minimum of 90 days prior to turn-in. This reinspection will be based on the original qualifying inspection noted in (1), above.

*(c)* Cannibalization of depot maintenance candidate items and controlled exchange of component parts by field organizations are prohibited. Exceptions will be made only in urgent cases of field operational readiness requirements and then only with the written concurrence of the USAMC MSC commander.

(2) Materiel at unit level that is excess as a result of changes in authorization documents or displaced equipment will be turned in using the standard outlined in *a.*, above. USAMC may provide an exception for equipment accepted for depot overhaul or rebuild, recapitalization, equipment being disposed of, or other equipment if an appropriate reason

exists. Other excess materiel (that is, found on post) may be turned in to the supporting supply activity in an “as is” condition.

(3) Turned-in materiel staying in the physical custody of units but on the property accounts at SSA or higher levels:

(a) This materiel will not be scheduled for repair or maintenance services unless directed by the command having property accounting responsibility (for example, SSA or NICP).

(b) Commanders will ensure that these items are not cannibalized or involved in controlled exchange without prior authorization from the NICP.

(4) Items found on post may be turned in to the supporting SSA in an as is condition in accordance with (2), above; however, commanders will take responsible action to maintain the value, utility, and security of Government property while it is in unit custody.

g. Exceptions are as follows:

(1) Aviation equipment transferred between property accounts will conform to the serviceability criteria contained in TM 1-1500-328-23.

(2) Equipment that is used as training aids and assembled and disassembled (CC “F” or less) requires depot overhaul prior to transfer or reissue. Equipment used for base operations or for the original purpose operator/crew training will meet the transfer/turn-in standard in accordance with a, above.

#### **4-7. Controlled exchange**

a. Controlled exchange is the removal of serviceable components from unserviceable, economically reparable end items for immediate reuse in restoring a like item or weapon system to an MC condition. The unserviceable component must be used to replace the serviceable component or retained with the end item that provided the serviceable component.

b. Controlled exchange is authorized only when—

(1) Required components are not available from the source of supply within the IPD indicated on the maintenance request.

(2) A valid requisition is submitted to replace the unserviceable item.

(3) The maintenance effort required to restore all of the unserviceable reparable materiel involved to an MC condition is within the MAC authorization and the capability of the unit performing the controlled exchange.

(4) The end item or weapon system from which the serviceable component is removed is classified not mission capable supply (NMCS).

(5) Aircraft from which a serviceable component is removed must be classified as one of the following: NMCS, not mission capable maintenance (NMCM), or partially mission capable (PMC).

(6) Aircraft maintenance manual instructions require that a known serviceable component be temporarily used while troubleshooting. Such components may be temporarily exchanged from an FMC or PMC aircraft.

(7) The end item or weapon system will not be degraded to an uneconomically reparable condition.

(8) The end item or weapon system from which the serviceable component was removed is protected from further degradation.

(9) The unserviceable component is tagged and installed on, or retained with, the end item or weapon system from which the serviceable like item was removed. In addition, the removal of the component must be recorded on the DA Form 2407/DA Form 5990-E or DA Form 2404/DA Form 5988-E or DA Form 2408-13-3 for the end item or weapon system. This is to retain the identity and integrity of the reparable end item or weapon system.

(10) The organization performing the controlled exchange takes prompt action to restore the unserviceable materiel to an FMC condition.

c. When the controlled exchange satisfies a requirement already in the Army supply system, that requisition will be either canceled or used to restore the unserviceable end item or weapon system to FMC.

d. Controlled exchange by using units is authorized only when—

(1) All of the unserviceable reparable materiel involved is owned or under control of the organization performing the controlled exchange.

(2) It is the only means reasonably available to eliminate an adverse effect on the operational readiness of the unit, organization, or activity performing the controlled exchange.

(3) Approved by the commander of the organization performing the controlled exchange.

e. Controlled exchange by DS, AVIM, and GS levels of maintenance will be authorized only when—

(1) It is the only means of providing an FMC end item or weapon system to a supported unit within the time frame indicated by the IPD on the maintenance request.

(2) Approved by the DS/GS commander, IMMO, or his or her designated representative.

f. During mobilization or combat, MACOM commanders may modify the controlled exchange conditions as deemed necessary.

g. Controlled exchange is not authorized when the investigating officer has not formally released the materiel involved in an accident.

- h.* Controlled exchange is not authorized on ORF assets.
- i.* Control exchange documents and a controlled exchange log will be maintained for 1 year (calendar year or fiscal year). Documentation will be filed under the file number 750–1a (ARIMS).

#### **4–8. Cannibalization of materiel**

*a.* Cannibalization is the authorized removal of components from materiel designated for disposal. Cannibalization supplements supply operations by providing assets not immediately available through the Army supply system. Costs to cannibalize, urgency of need, and degradation to resale value of the end item should be considered in the determination to cannibalize.

*b.* Materiel awaiting disposition instructions from an NICP will not be cannibalized without prior approval of the owning NICP.

*c.* Policies and procedures for establishment and operation of cannibalization points are contained in AR 710–2 and DA Pam 710–2–2.

*d.* During combat, commanders may authorize the cannibalization of disabled equipment only to facilitate repair of other equipment for return to combat. No parts will be cannibalized for stockage. However, service collection/classification companies—standard requirement code 43439L0—have the explicit mission to remove items for return to stock in accordance with section I of their TOE.

## **Section II**

### **Operations Management**

#### **4–9. Materiel records and reports**

Materiel data records and reports for maintenance management and performance of maintenance are prepared and maintained as prescribed in DA Pam 738–750, DA Pam 738–751, and AR 700–138.

#### **4–10. Measurement of maintenance performance**

*a.* The management of maintenance operations throughout the Army will be based upon a performance management approach that supports the Army management philosophy described in AR 5–1. This approach will enable the maintenance organization to develop a unified effort around goals and objectives.

*b.* The planning and controlling functions of management will be emphasized to ensure that—

- (1) Objectives are established to support mission goals.
- (2) Performance is measured against quantifiable standards that reflect the objectives.
- (3) Corrective actions taken are based on improving the factors that are constraining performance.

*c.* Maintenance performance measures are the key element of the control function of maintenance operations management. Through use of performance measures, commanders and managers will ensure that their maintenance operation is providing the best possible support to sustain combat readiness.

#### **4–11. Unit-level management**

Commanders and managers will manage their unit-level maintenance per the procedures contained in FM 4–30.3 and DA Pam 750–35.

#### **4–12. Manpower utilization standards**

*a.* The MACOMs will ensure establishment of a man-hour accounting system where automated capability exists. Man-hour accounting is optional where automation is not available and manual procedures must be used. However, the utilization of maintenance manpower resources for mission accomplishment is a mandatory command/management function in Army organizations.

*b.* Unit commanders and IMMOs are responsible for using assigned military and civilian maintenance personnel. The maintenance supervisor is directly responsible for using available maintenance personnel. AR 570–4 provides policy for the availability of personnel in peacetime. Appendix B provides guidance to commanders and managers on the computation and use of manpower utilization rates. The following are DA-directed minimum standards and maintenance man-hour utilization rates:

- (1) The standard for using assigned civilian personnel in maintenance operations is 85 percent of the time available for duty.
- (2) The standard for using available military personnel in maintenance operations is 50 percent of the time available for duty.

*c.* In addition to these standards, appendix C determines the tactical maintenance augmentation requirements for military mechanics during peacetime garrison operations.

#### **4-13. Maintenance management systems**

- a.* The primary functions of maintenance management include forecasting, distribution, scheduling, and production control of maintenance workloads.
- b.* The STAMIS will take precedence over all manual, MACOM standard or installation-unique systems for Army maintenance management. Management procedures for the STAMIS are in the applicable system user manual.
- c.* When a materiel maintenance STAMIS is fielded, the requirement for manual system forms, such as signature cards, will be discontinued and automated forms will be routinely accepted.
- d.* TAMMS and TAMMS-Aviation (TAMMS-A) database will be maintained by USAMC.
- e.* The ULLS is the DA standard system to automate TAMMS and TAMMS-A at the unit level as described in DA Pam 738-750 and DA Pam 738-751.
- f.* The SAMS is the DA standard automation system to support maintenance at the DS/GS and installation levels of maintenance.
- g.* The maintenance module of the DA standard multicommand system for the Army Medical Department Property Accounting System is the automated maintenance management system for TDA medical maintenance activities. MTOE MED maintenance units use the Theater Army Medical Management Information System (TAMMIS).

#### **4-14. The work order logistics file**

- a.* The WOLF is a national-level database of historical maintenance data that are received from DS, GS, and AVIM maintenance units worldwide. All active Army, Reserve, National Guard units, and contractors will report monthly closed work order (DA Form 2407/SAMS equivalent) information to LOGSA by the 10th day of the following month. (High volume outside the continental United States (OCONUS) organizations may submit partial reports on a weekly basis at their discretion.) WOLF data are critical to Army planning and programming, and it is essential that commanders at all levels ensure the timely, accurate reporting of maintenance actions into the WOLF. WOLF additionally serves as a critical data source for tools, test equipment, and personnel data in determining maintenance structure and maintenance support requirements.
- b.* WOLF data are a portion of the LIDB at LOGSA. LOGSA is responsible for ensuring that the WOLF database is compatible with the needs of the Army and is fully compatible with existing and emerging STAMIS systems. LOGSA also must perform yearly customer reviews to ensure that the needs of the Army are being met.
- c.* Commanders will ensure that any changes to DOD activity address code or UIC associations within their organizations are promptly reported to LOGSA.
- d.* Commanders at all levels will ensure that trained personnel and established SOPs are in place to meet the automated reporting requirements.

### **Section III**

#### **Technical Assistance and Supply Interface**

#### **4-15. Technical assistance**

Effective maintenance support of materiel combines the maintenance conducted by the using activity and its supporting maintenance activity. Supporting maintenance activities must maintain a proactive liaison to assist using activities in accomplishing their materiel maintenance responsibilities.

#### **4-16. Logistics Assistance Program/logistics support element**

- a.* AR 700-4 contains policy and procedures for providing technical assistance to users during and after equipment fielding.
- b.* The CG, USAMC provides and manages a USAMC worldwide LAP for proponent materiel by determining requirements and establishing, staffing, and maintaining LAOs. The Chief of Engineers (COE), TSG, CG, U.S. Army Signal Command (USASC), and CG, U.S. Army Intelligence and Security Command provide logistics assistance personnel for materiel under their proponenty.
- c.* Logistics assistance personnel will be technically knowledgeable of assigned materiel, Army field maintenance organizations and operations, and the wholesale and retail supply system. The installation POC for the Integrated Logistics Analysis Program is the LAO.
- d.* In accordance with FM 4-30.3, the LSE is a command and control team designed to supervise and/or coordinate all in-theater support provided by applicable USAMC activities, either permanently assigned to theater or deployed on a temporary basis for specific missions. It is the forward element of the national logistics base that provides support at the operational and tactical levels across the spectrum of military operations, including supporting multinational and joint operations.

#### **4-17. Repair parts supply (class IX)**

- a.* Repair parts allocation, stockage, and supply policies and procedures are contained in AR 710-2, AR 420-18, DA Pam 710-2-1, DA Pam 710-2-2, and associated automated systems TMs.

- b.* AR 710–2 controls recovery of reparable secondary materiel.

## **Section IV**

### **Contract Maintenance Support**

#### **4–18. Private enterprise**

*a.* When the Army maintenance system cannot provide required support, the Army will rely on the domestic and foreign competitive private enterprise system to support its maintenance requirements.

*b.* The MACOMs will ensure that essential quality requirements for maintenance service contracts are defined, quantified, measured, and assessed during the contracted-out support process. Solicitations and contracts for maintenance services will require—

- (1) Quantitative measures of quality and performance.
- (2) Contractors to submit historical data that will show the capability to achieve these quantitative measures. These data are used in the solicitation review process.
- (3) Specific contractual provisions for obtaining contractor conformance, such as award and incentive fee provisions for meeting performance quality and cost standards.
- (4) Test and evaluation to be performed to demonstrate performance and corrective actions to be taken on deficiencies revealed.

*c.* Commanders contracting for commercial organizational DS- or GS-level repair of equipment will ensure that these contracts include provisions for collection of work order (DA Form 2407/SAMS equivalent) data from the contractor. Contractors will provide (DA Form 2407/SAMS equivalent) data via automated means to the WOLF.

*d.* Any contract for commercial application of MWOs will include provisions that MWOs will be applied and reported in accordance with AR 750–10.

#### **4–19. Prohibitions**

*a.* Maintenance by contract personnel is prohibited when—

- (1) The maintenance workload to be performed is necessary for individual and unit training.
- (2) A satisfactory commercial source is not available and cannot be developed in time to provide maintenance support when needed.
- (3) In-house resources are available and contract maintenance support will result in higher cost of maintenance support to the Army.
- (4) The product or service is available from another DOD component or another Federal department or agency.

*b.* Restrictions are as follows:

- (1) Contractors will not be permanently stationed forward of the division rear boundary. (Also see AR 715–9.)
- (2) The contractor may travel forward of the division rear boundary on a case-by-case basis to provide temporary on-site maintenance if the senior military commander determines that contractor services are required at lower echelons.

#### **4–20. Foreign enterprise limitations**

*a.* Foreign private enterprise can be used for contracts awarded and performed OCONUS only in the following situations:

- (1) U.S. contractor or DOD sources lack the organic capacity to perform the task in the time required. In this situation, use of foreign private enterprise is interim in nature until U.S. capability can be developed or expanded.
- (2) Use of foreign private enterprise has been predetermined by international agreement.
- (3) The necessity for establishing an alternate foreign source has been determined formally by DOD as being in the best interests of U.S. strategic or tactical objectives.
- (4) Use of foreign private enterprise will not affect the development or maintenance of U.S. national capabilities.

*b.* The use of foreign contractual services will be contingent on U.S. contracting authority certification of quality, capability, and capacity.

#### **4–21. Readiness of MTOE units**

Contractual services to support readiness of MTOE units will be allowed—but generally limited to a short-term basis—

*a.* Pending the attainment of a unit, DS or GS organic capability, or to allow for peak workloads of a transitory nature. For OCONUS, when the using unit, the local IMMA, and DS/GS units do not have the capability to provide unit-level maintenance to an acceptable level of readiness.

*b.* When required, programmed, and contracted by the materiel developer for an interim period to attain an earlier operational status for initial fielding of new military materiel.

*c.* For the completion of overhaul or modification of military materiel when—



(1) The extent or complexity of the modification or modernization work to be accomplished requires the technical qualifications of the original equipment manufacturer.

(2) Repairing complex electronic devices that require long-term training for skill development and expensive stand-alone test equipment.

#### **4-22. Contingency plans**

Contingency planners will consider the maintenance potential of facilities in overseas areas that may be operated under military control or by contractual arrangement with commercial sources.

#### **4-23. Classified communications security**

All proposals for contract maintenance support of classified COMSEC/signals intelligence (SIGINT) and electronic warfare (EW) equipment must undergo an assessment of risks to national security prior to using commercial maintenance sources. The National Security Agency (NSA) must conduct this special risk assessment. The proposal, including performance work statements (PWS) with additional information identifying the COMSEC/SIGINT and EW equipment, density supported, and levels of maintenance to be performed, should be submitted through Deputy Chief of Staff, G-3, ATTN: DAMO-C4T, 400 Army Pentagon, Washington, DC 20310-0400, to Director, National Security Agency, ATTN: S-04, Fort Meade, MD 20755-6000. Classified equipment not under NSA cognizance being considered for maintenance support contracts to contractors other than original equipment manufacturers will be given an assessment of risk as prescribed above. Approval by HQDA is required prior to contract award. In the event of approval from NSA and/or HQDA, then the provisions of chapter 5, section III apply to further processing.

### **Section V**

#### **Inter-Service Maintenance Support**

#### **4-24. General**

The ISSAs will be fully explored prior to submission of requests through MACOMs to HQDA (DALO-SMM) for additional or expanded organic maintenance facilities. This includes modernization of tooling and materiel of non-MTOE support and depot-level maintenance facilities. ISSAs will be used to provide maintenance support services when—

- a. This means is the least costly to the Government.
- b. Materiel to be supported is common to the U.S. Army and another Service.
- c. The supporting agency or component has the available capability to render such support.
- d. The provision of such support provides for a reduction in NMC materiel and/or provides the potential for reducing investment and operating support costs.

#### **4-25. Exceptions**

The ISSAs will not be used—

- a. To document transfer of responsibility for a function or mission from one DOD component to another.
- b. When an organic support capability and capacity for this service is required to sustain military readiness.

#### **4-26. Personnel support**

When another DOD component or Federal Government agency has the available capability, with the exception of personnel, and the provision of the support is to the overall advantage of the Government, the matter will be referred to HQDA (DALO-SMM) for resolution prior to establishing duplicate facilities.

#### **4-27. Reciprocal support**

Upon request, the Army will provide maintenance support to other DOD components and Federal Government agencies to the extent that its military requirements will permit and if available capabilities and capacities exist. This support will be executed at the lowest practicable command level.

#### **4-28. Funding support**

Each Army element is responsible for programming, budgeting, and funding to support the ISSAs to which it is a party. Whenever manpower or fund requirements exceed available resources, MACOM commanders will seek HQDA (DALO-SMM) approval.

#### **4-29. Provisions of ISSAs**

The ISSAs will—

- a. Specify responsibilities for furnishing repair parts and other support materials required for the completion of the maintenance operations. Normally, materials are provided by the agency or component furnishing the service.

*b.* Make suitable provisions for the interchange of maintenance performance and management data between all parties to the agreement.

*c.* Contain provisions for review every 2 years to determine whether the agreement should be continued, modified, or terminated.

#### **4-30. Transfer of resources**

*a.* The transfer of resources (personnel, funds, and materiel) resulting from establishment, modification, or termination of local support agreements will be accomplished per existing Army and DOD procedures.

*b.* Army agencies will provide inter-Service support on a reimbursable basis. Nonreimbursement arrangements are authorized for service provided in combat areas.

## **Chapter 5 Commodity-Oriented Maintenance Policies**

### **Section I Maintenance of Combat Vehicles**

#### **5-1. General**

Combat vehicles will be selected as candidates for recapitalization and overhaul during peacetime under the CVE program. MACOMs will report combat vehicles requiring depot maintenance support to, and receive disposition instructions from, the appropriate commodity command. Selection of equipment for overhaul:

*a.* Combat vehicles reaching a mileage or hour interval prescribed by USAMC will be inspected by depot-level teams to identify vehicles requiring overhaul. Only the vehicles meeting the scoring criteria will be directed for return to a USAMC depot. A copy of the evaluation will accompany the vehicle when it is sent to an overhaul facility. Approved repair candidates will be scheduled and turned in to depot maintenance shops per the CVE program. (See para 4-6 for transfer/turn-in standards.)

*b.* Combat vehicles that do not yet reach the prescribed mileage or hour threshold but are considered to be overhaul candidates by the user MACOM may be nominated by the MACOM for evaluation by the teams.

*c.* Combat vehicles requiring extensive modernization or recapitalization in a depot facility may be inducted without benefit of the combat vehicle evaluation. These vehicles will be overhauled/rebuilt to a like-new condition in conjunction with the modernization or recapitalization depot maintenance work request (DMWR), National Maintenance Work Requirement (NMWR), or scope of work.

*d.* When a replacement item is not available and the depot cannot overhaul and return it to user, the MACOM commander can authorize units to continue using the item at a low priority/low usage rate until a replacement is available.

#### **5-2. ARNG maintenance**

*a.* All depot maintenance for ARNG end items (except aircraft) will be on an exchange or repair-and-return basis. The aircraft depot repair program will be scheduled on an exchange basis. States will coordinate directly with supporting area TMDE support teams (ATSTs) for calibration services and calibration repairs provided to the State under NGB-funded programs. Surface equipment that requires unscheduled or urgent depot repair will be reported to NGB-ARL-M for consideration on a case-by-case basis, and aircraft in that condition will be reported to NGB-AVN. Army surface equipment will be selected for depot repair under the following criteria:

(1) All major end items that are type-classified standard and meet condition requirements as determined by the commodity command concerned.

(2) All major end items type-classified standard in an unserviceable condition beyond the capability of GS maintenance.

(3) Major end items that have a record of frequent maintenance failure requiring extensive repairs and for which the recurring failures, if overhauled at a depot facility, would be cost-effective.

(4) Combat vehicles will be selected for depot repair on a condition basis (not on mileage) when TI by GS maintenance indicates that depot repair is in the best interest of economy and readiness.

(5) Towed and self-propelled artillery weapons, mortars, and recoilless rifles will be selected for depot repair per TMs.

*b.* Current year requirements:

(1) For current year requirements, NGB-ARL-M will provide the commodity commands with the DD Form 448 (Military Interdepartmental Purchase Request) for major end items and calibration services/repair support. Calibration services and red tag repair of TMDE will be funded by NGB and provided by the TMDE support group ATSTs to States within the team's area of responsibility. A schedule for depot work input will be provided to each State

concerned. The State will prepare a DA Form 2407/DA Form 5990-E/DA Form 2408-13-3 to the designated depot with necessary shipping documents. The State will retain ownership of the item during the entire repair-and-return process, or the item may be exchanged. Transportation costs of a major item to and from depots will be per AR 130-400.

(2) Reconditioning and repair of combat vehicle tracks and road wheels and related rubber products will be funded directly by NGB.

(3) For repairs and/or services for nonmajor items that are to be provided through the USAMC depot system, requests for secondary items and fuel tank recoating will be processed as follows: States requiring DS- or GS-level backup maintenance assistance will request such support from the commodity command having responsibility for the item.

## **Section II**

### **Maintenance of Watercraft**

#### **5-3. General**

*a. Purpose.* To establish policies that are specific to the maintenance of DA watercraft.

(1) The materiel maintenance system that supports Army watercraft is made up of diverse maintenance activities that share the common goal of creating and sustaining watercraft combat readiness.

(2) The four major functional responsibilities of the Army watercraft maintenance activities are—

(a) Sustaining materiel in an operational status.

(b) Restoring it to a serviceable condition.

(c) Updating or upgrading its functional usefulness through MWO, materiel change, and product improvement.

(d) Maintaining materiel to TM 10- and 20-series standards.

(3) The objective of Army watercraft maintenance is to ensure safe, seaworthy, reliable, and FMC watercraft. The primary focus of repair will be component exchange in the area of operation and component repair in the rear (theater, GS, and depot level). Watercraft units will follow the Army's standard of replace forward and repair in the rear.

*b. Scope.* This section applies to all Army watercraft and amphibians worldwide and all operators and support personnel of watercraft, up to depot level, including contractors.

(1) Army watercraft and amphibians are defined in AR 56-9 and TM 55-500.

(2) Tactical river crossing materiel or non-MTOE/TDA watercraft used by the U.S. Corps of Engineers in its civil works projects/activities (except those items of marine engineering materiel to be activated in the time of mobilization) are excluded from the requirements herein.

#### **5-4. Maintenance policies**

*a.* All watercraft maintenance units and activities will ensure compliance with this regulation. The NMP will ensure that depot-level operations (service and repair) are in full compliance with this regulation.

*b.* The NMP/NICP will establish and maintain watercraft configuration and logistics support management programs necessary to support watercraft throughout its lifecycle.

*c.* The NMP will provide a system, as shown below, for the performance of maintenance and/or repair actions on Army watercraft below depot level.

(1) Service and overhaul/repair of end items and other materiel designated by the equipment proponent via the MAC or other appropriate publications. When the MAC chart does not include subject fault, refer to FM 4-30.3 for guidance.

(2) Manage/provide data and status updates to using command, LOGSA (such as WOLF, TAMMS equipment database (TEDB), LIDB, or readiness integrated database (RIDB)) and execute the on condition cyclic maintenance (OCCM) program for Army watercraft. All status updates will be sent by an authorized and compatible STAMIS system.

(3) Emergency repairs:

(a) A qualified marine inspector or surveyor will perform a marine survey/technical condition inspection. The inspection will determine the scope of work required to return a watercraft to a serviceable condition (TM 10- and 20-series standard).

(b) When depot-level maintenance by MAC or beyond the capability of the using command is requested by evacuation work order, disposition instructions and funding guidance will be requested from the NMM/NICP through the normal STAMIS work order process. Depot-level maintenance will be accomplished on a case-by-case basis as directed by the NMM, as shown below.

(c) When emergency repairs dictate that a watercraft be dry-docked to accomplish the necessary repairs, it is usually considered depot-level maintenance based on the MAC level of the actual repair/service being performed. Regardless of MAC level of work performed while in dry dock, the depot level will perform dry-dock report for all dry-docking.

(d) When operational conditions dictate, the NMM may authorize lower-level maintenance activities to perform

emergency repairs beyond their authorized level of repair action. The quality assurance (QA) and STAMIS work order data responsibility will remain at the appropriate MAC level.

(e) Watercraft awaiting disposition instructions will be maintained in administrative storage.

(f) When engaged in sailing operations (underway/deployed away from home port) and maintenance problems occur where normal corrective action can not be completed, a vessel master is authorized to perform any level of maintenance required to maintain the watercraft in a seaworthy, safe, and operable condition. This decision will be made while considering the availability of resources at sea, the skill of the crew, and the impact the repairs will have on the basic seaworthiness and operability of the watercraft.

1. When the condition in *f*, above, exists, suitable repairs may be accomplished to correct the emergency. However, materiel so repaired must be inspected through the work order process by the MAC authority as soon as possible and determined properly repaired to TM 10- and 20-series standards before being returned to an operable condition. Configuration control will be maintained.

2. The NMM will provide maintenance instructions and assistance in the above cases upon request. This request will be followed up by the STAMIS evacuation work order process.

3. The above policy is also applicable to maintenance of electronic materiel installed onboard watercraft.

### **5-5. On condition cyclic maintenance (OCCM)**

*a. General.* All Army watercraft will undergo OCCM per the intervals established in table 5-1. The intervals in table 5-1 are maximum time intervals. If more than 3 months deviation is anticipated, the using unit will request a waiver with justification through the appropriate MACOM commander to the NMP in accordance with paragraph 5-4 of this regulation. The equipment status reporting will follow standard Army Materiel Status System guidelines after the waiver period (90 days after the service due date) has expired. OCCM is the depot-level service that is performed to ensure compliance with international and national maritime regulatory guidance for minimum safety standards at sea. OCCM consists of a series of inspections and maintenance service actions that are designed to ensure that a watercraft's structure (internal and external), piping, main and auxiliary engines, electrical installations, lifesaving appliances, fire detecting and extinguishing equipment, pollution prevention equipment, and other equipment is maintained in a suitable, seaworthy, and safe condition.

*b. Inspections.* Marine condition surveys incident to the performance of OCCM will be accomplished per paragraph 5-4.

(1) One hundred eighty days prior to the scheduled OCCM cycle, a marine condition survey will be performed. This survey will provide the basis for written specifications by which OCCM is accomplished. This will be a dock-side inspection. When possible, the services of qualified divers will be used to ascertain the condition of the watercraft's hull and appendages below the deep load waterline.

(2) At the time of dry-docking, a dry-dock inspection will be performed to identify additional repair/maintenance requirements not observable at the time of the 180-day inspection (dockside).

(3) Scheduled surveys required by the United States Coast Guard (USCG) and the American Bureau of Shipping (ABS) for retention of "load line" certification will be accomplished per Title 46, Subchapter E, Code of Federal Regulations and TB 55-1900-201-45/1. When such inspections are required, the services of ABS will be employed.

(4) In addition to the 180-day marine condition survey, the NMP will also conduct an interim survey after 50 percent of the OCCM dry-docking interval has elapsed. Whenever possible, this survey will also include an underwater hull survey as defined by TB 55-1900-201-45/1.

*c. Maintenance.* The scope of work to be accomplished during OCCM will vary depending upon watercraft condition, resource limitations, class of vessel, and other factors. As a minimum, the following maintenance and repair actions will be accomplished during OCCM:

(1) Bottom cleaning and painting up to the deep-load waterline per TB 43-0144.

(2) All repairs below the deep-load waterline as identified during dry-dock inspection/underwater hull survey.

(3) Overhaul/replacement/renewal of all major components identified for overhaul at the depot level. The requirements will be determined through diagnostic testing, hours of operation, and inspection of internal components as directed by the NMP.

(4) All other maintenance and/or repairs identified by the marine/ship surveyor required to affect a permanent change in the watercraft's condition so as to ensure the following:

(a) Capability of operating in an unrestricted manner for the purposes intended.

(b) Capability of being maintained and operated per all applicable regulations, rules, laws, and policies.

(c) Sustainability of the inherent reliability and maintainability designed and manufactured into the equipment between repair cycles.

(d) Sustainability of acceptable rates of watercraft readiness between OCCM cycles.

(5) All minimum maritime safety inspections required by ABS; CFR 46-series ("Shipping"); and International Convention for Safety of Life at Sea, 1974 (SOLAS) to maintain the load-line documentation in a current status.

**Table 5-1**  
**On condition cyclic maintenance/drydocking intervals by class/type of watercraft**

Class/type watercraft	OCCM interval
<b>Class A</b>	
BDL, DS 5002	36 months
LSV	36 months
FS, All	36 months (OCCM survey at 30 months)
LT, DS 3006	36 months
ST, DS 3004	36 months (interim survey at 18 months)
LCU All	36 months
<b>Class B</b>	
J Boat, DS 4003	36 months
T Boat, DS 2001	36 months
LCM8, All	36 months (OCCM survey at 30 months)
FB, All	36 months
ST, DS 320	36 months (interim survey at 18 months)
<b>Class C-1</b>	
ROWPU Barges	36 months
FMS, DS 7011	36 months
BRM, DS 7016/7010	36 months (OCCM survey at 30 months)
BD, 264B/413D	36 months
BG, DS 231B/231C	36 months (interim survey at 18 months)
<b>Class C-2</b>	
Stationary Training Platforms	48 months
BC, All	48 months
BCDK, ALL	48 months (OCCM survey at 42 months)
BK, All	48 months
BPL, All	48 months (interim survey at 24 months)
Wooden Hull Vessels	12 months
Q Boot, DS 4002	12 months (OCCM survey at 6 months) No interim survey required

## 5-6. Marine condition surveys

*a. General.* Marine condition surveys are TIs and written evaluations performed by qualified marine surveyors per TB 55-1900-201-45/1, CFR 46-series, ABS criteria, and SOLAS standards. The NMM is responsible for the policies and procedures applicable to the performance of marine condition surveys other than operator manual PMCS chart and the above-mentioned regulatory publications.

*b. Inspector qualifications.* Only experienced and qualified technical experts will perform marine condition surveys on Army watercraft. This requires the surveyor to be thoroughly familiar with, and capable of interpreting, written standards, Federal laws, rules, and regulations affecting watercraft inspection, common watercraft construction, maintenance, and repair procedures. The marine surveyor must also be capable of preparing written repair specifications and estimating repair costs (man-hour and materiel costs) for repairs required to return a watercraft to condition code "B" as defined by AR 725-50.

*c. Responsibilities.*

(1) The NMP is responsible for the performance of all marine condition surveys incident to the repair and/or overhaul of Army watercraft when the maintenance/repair action is to be accomplished at the depot level. This includes all marine condition surveys incident to the accomplishment of OCCM as defined by this regulation.

(2) Support maintenance organizations and activities at the retail level are responsible for performing marine condition surveys incident to the repair of Army watercraft at their level or evacuation by STAMIS work order to the next highest level.

(3) When qualified marine surveyors are not available at support facilities, assistance may be requested through normal channels to the NMM in accordance with paragraph 5-4c.

### **5-7. Maintenance reporting**

Watercraft that are under the automated STAMIS system will be fully supported by depot level under the same system, ensuring compatibility of information and trend tracking. End user manuals for the applicable STAMIS will be the primary guidelines used. (See DA Pam 738-750.) All Army maintenance management system forms and records on watercraft, landing craft, and amphibians that are using the manual system will be completed according to DA Pam 738-750. Additional information can be found in TB 43-0002-26, TB 55-1900-201-45/1, TB 55-1900-205-24, and AR 56-9.

## **Section III**

### **Maintenance of COMSEC Materiel**

#### **5-8. General**

*a.* The maintenance of COMSEC materiel is greatly influenced by the security requirements concerning personnel, operations, and maintenance of COMSEC materiel. These requirements are contained in AR 380-series, AR 25-12, and DA Pam 738-750.

*b.* COMSEC materiel consists of—

(1) Publications and classified equipment that are managed within the COMSEC materiel control system.

(2) Publications and unclassified COMSEC equipment that are managed within the Army maintenance and supply systems.

*c.* The CG, USAMC is responsible for the wholesale logistic support of Army COMSEC materiel.

*d.* Commanders at all levels are responsible for the proper maintenance of COMSEC materiel under this regulation.

*e.* This section applies to—

(1) All elements of the active Army, ARNG, and USAR that maintain, inspect, or requisition COMSEC materiel.

(2) Contracting officers who administer Army contracts that require or authorize the issue of COMSEC materiel to a contractor.

#### **5-9. Maintenance policies**

*a.* TMDE used for maintenance of COMSEC materiel will be calibrated under AR 750-43, EM 0022, or specifications issued by the CG, USAMC.

*b.* Unit, DS, GS, and depot maintenance will be accomplished on COMSEC materiel under the concepts and policies set forth in chapter 3 of this regulation and in this section as modified by COMSEC directives and materiel publications.

*c.* General technical instructions for completion of maintenance operations and testing of COMSEC materiel are contained in NSA maintenance documents and in DA materiel publications. DA Pam 25-35 contains a listing of those publications that apply to COMSEC materiel and gives requisitioning instructions for NSA and DA publications.

*d.* The provisions of DOD 5220.22-R and Federal Acquisition Regulation that pertain to contract maintenance apply to COMSEC materiel. In addition, commanders and contracting officers will ensure that contractors meet all applicable criteria contained in this regulation, AR 380-40, TB 380-41, and DA Pam 25-380-2. Requests for policy waivers and exceptions to established COMSEC procedures will be submitted through command channels to the Director, U.S. Army Communications Security Logistics Agency (USACSLA), ATTN: SELCL-ID-P3, Fort Huachuca, AZ 85613-7090, for approval.

#### **5-10. Modification of COMSEC materiel**

Modification of Army-owned COMSEC materiel will be reported in accordance with AR 750-10.

#### **5-11. Records and reports**

Performance of maintenance operations on COMSEC materiel will be recorded in accordance with DA Pam 738-750.

## **5-12. Qualification and maintenance training policy for COMSEC equipment**

*a.* The personnel qualification requirements for training and certification of COMSEC materiel maintenance technicians are established in AR 25-12. Formal programs of instruction available at U.S. Army training centers for structured classroom training of COMSEC technicians are listed in DA Pam 351-4.

*b.* National policy for COMSEC materiel maintenance training standards and maintenance operations, as promulgated by the NSA, is contained in DOD Instruction (DODI) 4660.2. This publication provides general policy for all Services on the requirements and security considerations applicable to the training of COMSEC maintenance personnel.

*c.* DODI 4660.2 also provides criteria for security awareness training requirements for all other CE technicians. Such security awareness training is a prerequisite to their performing maintenance at any level on COMSEC equipment end items and other major CE, weapons, or information systems containing embedded cryptographic components. (See also DA Pam 25-380-2.)

*d.* Adherence to the COMSEC training and maintenance policies and procedures contained in the referenced publications is compulsory. Security awareness training for all CE technicians will be documented on DD Form 2625 (Controlled Cryptographic Item (CCI) Briefing) and copies retained in personnel files and unit security records. In addition, maintenance supervisors will establish a file containing a copy of DD Form 2625 for each assigned technician under their control in maintenance facilities authorized to work on systems containing cryptographic components.

*e.* Supply of parts and special tools:

(1) COMSEC maintenance activities will establish and maintain PLL and shop stocks per AR 710-2 for both classified and unclassified repair parts.

(2) Cannibalization of COMSEC materiel will be accomplished according to paragraph 4-8 after approval by Commander, USACSLA, ATTN: SELCL-NMP.

(3) Tools and TMDE required for the maintenance of COMSEC materiel are authorized by appropriate MTOE, TDA, or nontactical telecommunications development projects. They will be obtained per AR 710-2.

(4) Repairable exchange procedures for COMSEC materiel are in AR 710-2.

## **5-13. Evacuation of unserviceable COMSEC materiel**

*a.* COMSEC equipment will be evacuated to the next maintenance level only after a qualified, certified inspector determines that evacuation is required per AR 25-12.

*b.* Unserviceable COMSEC materiel in CONUS and overseas areas that meet the above criteria will be evacuated through supply channels to the Commander, Tobyhanna Army Depot, ATTN: 5B1099, 11 Hap Arnold Blvd., Bldg. 73, Tobyhanna, PA 18466-5110. The only exception to automatic evacuation of unserviceable materiel is that unserviceable automatic secure voice communications network (AUTOSEVOCOM) equipment will be reported to Commander, USAF Cryptologic Depot, ATTN: LGGCYC, Kelly AFB, TX 78243, for disposition.

*c.* Components, assemblies, and parts that have manufacturing defects will be removed from the materiel at the authorized maintenance level. The removal will be reported on Standard Form (SF) 368 (Product Quality Deficiency Report) as a category II quality deficiency report under DA Pam 738-750. When practical, exhibits (defective components, parts, or assemblies) will be forwarded with the quality deficiency report. Those parts not forwarded will be tagged with DA Form 2402 (Exchange Tag) and held for further disposition instructions.

## **5-14. Controlled cryptographic items**

*a.* CCI are declassified COMSEC items. Accounting and requisition/issued procedures are in AR 710-2.

*b.* CCI end items must be unkeyed prior to storage when not in operational status or when being turned in through channels for maintenance.

## **Section IV**

### **Maintenance for Army Aircraft**

#### **5-15. General**

The objective of Army aviation maintenance is to ensure safe, reliable, and FMC aviation weapon systems, including airframes, engines, major components, avionics, aerial weapons, fire control/fire direction items, and other airborne ancillary materiel necessary to support the total aviation weapon system concept. To accomplish these objectives, three levels of aviation maintenance are established: aviation unit maintenance (AVUM), AVIM, and aviation depot maintenance.

#### **5-16. Aviation unit maintenance**

*a.* These activities will be staffed and equipped to perform high frequency "on-aircraft" maintenance tasks required to retain or return aircraft to an FMC condition. The maintenance capability of the AVUM is governed by the MAC and limited by the amount and complexity of ground support equipment, facilities required, the number of spaces, and critical skills available. The range and quantity of authorized spare modules, ground support equipment, TMDE, and components will be consistent with the mobility requirements dictated by the air mobility concept. Assignment of

maintenance tasks to divisional or other (TDA/MTOE) company-size aviation units will be based on overall maintenance capability, the requirement to conserve personnel and materiel resources, and air mobility requirements. If the aviation element is less than 10 aircraft, maintenance will normally be limited to scheduled inspections, minor adjustments, and minor repair.

*b.* ARNG Army Aviation Flight Activity (AAFA) will perform AVUM maintenance. Functions are defined in NGB Pam 750-2. The supporting AASF will perform maintenance beyond the capability of these organizations.

*c.* The AASF will perform AVUM and limited AVIM maintenance per NGB Pam 750-2. This includes diagnosis, servicing, preventive maintenance intermediate (PMI), phased maintenance, special inspections, aircraft recovery and evacuation, aircraft weighing, maintaining authorized ORF aircraft, minor airframe repair, avionics, and armament repair. These functions are specifically detailed in NGB Pam 750-2. Requests to exceed—

(1) Maintenance authority will be forwarded to the supporting aviation classification and repair activity depot (AVCRAD).

(2) Expenditure limits (funds/work hours) will be forwarded to Chief, NGB (NGB-AVN-A) through the supporting AVCRAD.

*d.* An aviation support facility in the USAR collocated with a supported AVIM unit may be authorized by HQDA to perform intermediate maintenance using tools/equipment authorized to the supported unit. If authorized, the expanded mission will only be in support of collocated Army Reserve aircraft and will be terminated upon movement/inactivation of the collocated AVIM unit.

### **5-17. Aviation intermediate maintenance**

*a.* AVIM units or activities including ARNG AASFs will—

(1) Furnish mobile, responsive, one-stop maintenance support.

(2) Perform all maintenance functions as designated by the MAC in materiel publications. Authorized maintenance includes—

(*a*) Replacement and repair of modules and components.

(*b*) Repair of end items that can be efficiently accomplished with available skills, tools, and materiel.

(3) Repair materiel for return to user and emphasize support of operational readiness requirements.

(4) Establish a program to support AVUM/AAFA units by repairing selected items for return to stock when such repairs cannot be accomplished at the AVUM/AAFA level.

(5) Inspect, troubleshoot, test, diagnose, repair, adjust, calibrate, and align aircraft system modules and components. Module and component disassembly and repair normally will be limited to tasks requiring cleaning and the replacement of seals, fittings, and items of common hardware.

(6) Determine the condition of specified modules and components removed prior to the expiration of the time between overhaul (TBO) or finite life.

(7) Perform aircraft weight and balance inspections and other special inspections that exceed AVUM/AAFA capability.

(8) Furnish quick response maintenance support and technical assistance through the use of mobile maintenance support teams and aircraft recovery and evacuation.

(9) Maintain authorized ORF aircraft.

(10) Furnish collection and classification services for serviceable and unserviceable materiel.

(11) Operate a cannibalization point activity under AR 710-2.

*b.* The aircraft maintenance company within the division will perform AVIM functions consistent with air mobility requirements and conservation of personnel and equipment resources.

*c.* The supporting nondivisional AVIM unit will furnish additional intermediate maintenance support.

*d.* Maintenance functions that exceed AVIM capability will be assigned to depot maintenance.

*e.* Unserviceable repairable modules, components, and end items that are beyond the capability of an AVIM/AASF to repair will be evacuated to depot maintenance.

*f.* Ground support equipment and TMDE will be evacuated to the appropriate nonaviation maintenance unit when it is beyond the capability of AVIM/AASF to repair.

*g.* Calibration and repair of TMDE will be performed as indicated in AR 750-43, TB 750-25, and EM 0022.

### **5-18. Aviation depot maintenance**

*a.* Army aircraft will be maintained and supported to the extent authorized in this regulation and TB 43-0002-3. Army aircraft may be accepted into depot facilities for programmed or unprogrammed maintenance. Accountability will be transferred to the NICP when aircraft are accepted for programmed depot maintenance. Aircraft accepted for unprogrammed depot maintenance will normally be processed on a repair-and-return-to-user basis.

*b.* The ARNG AVCRAD will perform AVIM in support of the ARNG aviation assets. In addition to AVIM maintenance, the AVCRAD may perform aircraft painting, major airframe depot-level repairs (DLR), and aviation intensive maintenance item component repair and management, when authorized. These functions are specifically



discussed in NGB Pam 750-2. Requests to exceed maintenance authority and/or expenditure limits (funds/work hours) will be forwarded to U.S. Army Aviation and Missile Command (AMCOM).

*c.* Programmed depot maintenance consists of aircraft recapitalization and overhaul, crash and battle damage repair, and modifications.

*d.* Aircraft will be selected as candidates for recapitalization and overhaul during peacetime under the Aircraft Condition Evaluation program as shown below:

(1) Aircraft with established overhaul programs will be evaluated using criteria developed by the NMP on an annual basis by aircraft condition evaluation teams fielded by the NICP.

(2) Aircraft condition evaluation data will be used by the NICP to establish a profile index for each evaluated aircraft by serial number and to determine depot overhaul candidates.

(3) Aircraft with the highest profile index will be scheduled for the depot overhaul program first.

(4) Aircraft overhaul programs will be developed by AMCOM based on data, funding, and depot capability. The overhaul program will be finalized and coordinated with MACOMs at the annual Worldwide Aviation Logistics Conference. The NICP will notify MACOMs at least 60 days in advance of the scheduled overhaul date of specific aircraft to be turned in.

(5) Aircraft scheduled for depot overhaul that subsequently incur crash or battle damage will be reported to the NICP for selection of replacement aircraft.

(6) As a related program to aircraft condition evaluation, the NICP will develop data from DA Form 1352 (Army Aircraft Inventory, Status and Flying Time (RCS DRC 130)) and DA Pam 738-751 to assist in identifying possible depot maintenance candidates.

*e.* Aircraft in combat areas will be selected for depot maintenance per TM 1-1500-328-25. The NICP will coordinate with the MACOM concerned to determine quantities to be turned in for overhaul. The MACOM will select aircraft overhaul candidates by aircraft serial number. Turned-in and replacement aircraft scheduled will be furnished to the MACOM at the annual Worldwide Aviation Logistics Conference.

*f.* Aircraft requiring crash or battle damage repair will be reported to, and disposed of, per instructions received from the NMP/NICP, using procedures prescribed in TB 43-0002-3.

*g.* Aircraft programmed for depot overhaul or crash and battle damage repair will have depot modifications installed during the overhaul process. Aircraft requiring depot modifications that are not scheduled for depot overhaul or crash and battle damage repair will be modified by contractor or depot modification teams in accordance with AR 750-10. All modification installed will be documented per AR 750-10. Depot modification programs for converting aircraft to later series (for example, AH-64A to AH-64D) will normally include overhaul as a part of the total program. Candidates for conversion should also be overhaul candidates whenever practicable. Conversion and modification programs will be coordinated between NICP and MACOM during the Worldwide Aviation Logistics Conference.

*h.* All applicable documents, forms, and records will be processed per DA Pam 738-751 during depot maintenance. Personnel preparing contract statements of work will ensure that the provisions of this publication are included in all applicable maintenance contracts.

#### **5-19. Aircraft parts that have been exposed to fire and/or saltwater immersion**

Aircraft parts, components, or assemblies that have been subjected or exposed to fire and/or saltwater immersion will not be reused locally under any circumstance. Such items will be condemned locally or, if considered repairable by competent inspection, returned through maintenance or supply channels for inspection and overhaul. All items that are to be condemned or returned for inspection and overhaul will require a statement on all applicable accompanying documentation, including DD Form 1577 (Unserviceable (Condemned) Tag-Materiel) or DD Form 1577-2 (Unserviceable (Repairable) Tag-Materiel), stating the item has been subjected or exposed to fire and/or saltwater immersion.

#### **5-20. Items removed from crash-damaged aircraft**

Extreme caution will be exercised in the reuse of items removed from crash-damaged aircraft or aircraft that have been involved in accidents. Items removed from a crashed aircraft or an aircraft that has been involved in an accident will not be reused regardless of apparent serviceability until such items have been subjected to a thorough inspection in accordance with paras 5-21 and 5-22.

#### **5-21. Inspection and testing of crash-damaged components and assemblies**

*a.* All functional components and assemblies (such as engines, transmissions, pumps, valves, generators, and blades) will be subjected to inspections and tests per the inspection and test standards required at the time of overhaul. Components not designed as overhaul items will be inspected and tested per the applicable maintenance manual. An item will either be condemned locally or evacuated to a depot maintenance facility according to the recoverability code assigned to the item.

*b.* All items that are to be locally condemned will require a completed DD Form 1577. This tag will be annotated to reflect that the item has been removed from a crashed aircraft or an aircraft that has been involved in an accident. Mutilation of condemned aeronautical items will be accomplished per TM 1-1500-328-23.

c. All items that are to be evacuated to a depot maintenance facility will require a statement on all applicable accompanying documentation, including DD Form 1577-2, to the effect that the item has been removed from a crashed aircraft or an aircraft that has been involved in an accident.

#### **5-22. Inspection and testing of structural parts and assemblies of aircraft**

Inspection and testing of structural parts and assemblies of aircraft structural parts and assemblies will, at a minimum, require a thorough visual inspection. Major support structures, fittings, attaching points, welds, flight control tubes and links, and so forth will be subjected to nondestructive flaw detection tests and dimensional and alignment verifications.

#### **5-23. Shipment of aircraft**

Unserviceable items selected for disposal by AMCOM will not be reinstalled in an aircraft. Action will be taken to ensure that the airframe attaching elements of the removed items are protected from deterioration or contamination while awaiting the replacement item. However, if the unserviceable aircraft is to be shipped or transferred off post or station for repair, the unserviceable or interchangeable item must be installed or completely secured to prevent possible damage, deterioration, or contamination during movement of the aircraft. All unserviceable components will be individually tagged with DD Form 1577-2 and suitable entries made in the aircraft equipment records.

#### **5-24. Posting aircraft forms and records**

Posting of aircraft forms and records will be in accordance with DA Pam 738-751.

#### **5-25. Maintenance training aircraft**

a. *Training aircraft.* Maintenance training aircraft are those aircraft employed for ground technical training that do not require airborne operations. Training aircraft are further classified as follows:

(1) *Category A.* Aircraft that can be returned to flyable status through minimum maintenance and modification. This category covers aircraft assigned on a temporary basis not to exceed 365 days to meet special training requirements. Extensions may be granted by AMCOM.

(2) *Category B.* Aircraft that are capable of ground operation if all components are installed. Category B aircraft can be returned to flyable status by depot rebuild or overhaul.

(3) *Maintenance training airframes.* Retired and condemned aircraft used to train maintenance personnel. Aircraft in this category are retired or have been damaged or deteriorated beyond the MEL established in TB 43-0002-3. Classification to maintenance training airframe status results in the aircraft being permanently grounded. Maintenance training airframes will be reported on DA Form 1352.

(4) *Maintenance training devices.* Aeronautical equipment other than category A or B aircraft or maintenance training airframes that are used to facilitate aircraft maintenance training. Items in this category range from uninstalled elements to mockups of major assemblies or functional groups.

b. *Training aircraft responsibilities.*

(1) Commander, AMCOM will—

(a) Provide aircraft for use as maintenance training aircraft based upon known requirements and as directed by USAMC.

(b) Submit recommendations through USAMC to HQDA for approval to classify and reclassify aircraft for maintenance training.

(c) Control current inventory of all maintenance training aircraft and distribute maintenance training aircraft to meet training requirements.

(d) Provide required repair parts support and MWO kits for category A and B maintenance training aircraft to the full extent required to complete maintenance.

(e) Provide required repair parts support for maintenance training that will ensure accomplishment of the training mission. Serviceable high-dollar value items (for example, engines, transmissions, rotor blades, and propellers) are not authorized except when approved by AMCOM.

(f) Provide funding for repair of crash-damaged aircraft for use as a maintenance trainer.

(g) Provide training activities with unserviceable or crash-damaged components as they become available.

(2) CG, FORSCOM; CG, TRADOC; major overseas commanders; and CNGB will—

(a) Present projected fiscal year consolidated requirements for maintenance training aircraft, maintenance trainers, components, and test equipment during the Worldwide Aviation Logistics Conference. Institutional training equipment requirements for the subsequent fiscal year will be obtained from annual requirements presented to HQDA in May/June each year.

(b) Receive, evaluate, and provide command approval or disapproval of all requests for maintenance training aircraft received from subordinate activities.

(c) Ensure that all maintenance training aircraft assigned to subordinate activities are maintained under this regulation.

(d) Prior to repairs being accomplished, determine if crash-damaged aircraft or aircraft that is not economically feasible to repair can be exchanged for category A or B aircraft already assigned to a training activity.

(e) Commanders of activities possessing maintenance training aircraft will—

1. Maintain maintenance training aircraft as prescribed herein.
2. Report to AMCOM all excess maintenance training aircraft.
3. Provide monthly reports of all maintenance training aircraft in their possession on DA Form 1352 per AR 700-138.

(f) General policy:

1. Installations and units authorized maintenance training aircraft will be designated by HQDA.  
2. Authority for the control, classification, and reclassification of aircraft defined as maintenance training aircraft rests with AMCOM.

3. A predetermined quantity of aircraft will be assigned to TRADOC as maintenance training aircraft to satisfy initial distribution requirements. Total requirements will be satisfied by subsequent phased deliveries as aircraft become available from production or from the operational fleet.

4. Category A and B maintenance training aircraft and aircraft designated as maintenance training airframes will be reported on DA Form 1352 per AR 700-138.

5. Uneconomically repairable, crash-damaged, or retired aircraft may be used, when economically feasible, as a source for maintenance training airframes that will (whenever possible) be used as a replacement for category A and B maintenance training aircraft and then be made available for return to flyable status, should a requirement exist. Any item removed from a crash-damaged aircraft for reuse will meet the criteria established by paragraphs 5-21 and 5-22. Final airframe classification will be made by AMCOM using TB 43-0002-3.

6. Category A and B maintenance training aircraft that are no longer required will be reported to HQ, TRADOC. HQ, TRADOC will report excess maintenance training aircraft to HQ, AMCOM.

7. Maintenance training airframes and devices that are no longer required will be reported to HQ, TRADOC. Excess maintenance training airframes and devices will be reported by HQ, TRADOC to AMCOM for disposition instructions.

8. Categories assigned to maintenance training aircraft will not be redesignated without AMCOM approval.

9. Aircraft items recorded on DA Form 2408-17 (Aircraft Inventory Record), when not required for training purposes on category B maintenance training aircraft, will be returned to stock using normal supply procedures.

*c. Maintenance training aircraft.*

(1) Category A aircraft will be maintained per applicable publications to a standard so that the aircraft can be returned to a completely operational flight status by AVIM within 60 working days. Category A aircraft should meet transfer serviceability standards prior to shipment to or from a designated training activity.

(2) Configuration control of category B maintenance training aircraft will be maintained through incorporation of all applicable MWOs and, to the extent possible, ensure that training is consistent with the field operational aircraft systems. All systems/components required for program of instruction (POI) will be maintained operational and updated per the latest applicable MWOs. Removal and turn-in of systems/components not required for POI may be approved by AMCOM. Category B aircraft and components will be maintained so they can be returned to flight operational status by depot overhaul or repair. Aircraft transfer standards are not mandatory for transfer to depot or any activity authorized the use of category B aircraft.

(3) Serviceable components/systems not covered in *d(2)*, below, will be preserved and periodically inspected, operated per appropriate TMs, and represerved.

(4) Components of maintenance training airframes that are not required for training purposes should be removed and returned to depot through normal supply channels. DD Form 1577-2 will be attached to each item. Disposition is per AR 710-2.

*d. Maintenance of equipment record folder.*

(1) Equipment logbooks and historical records will be maintained per DA Pam 738-751 and TM 1-1500-328-23 for all training aircraft, maintenance training airframes, and maintenance training devices.

(2) Ground operating time will be recorded on DA Form 2408-13 (Aircraft Status Information Record). A combination of flight time and ground run time will be used to determine time change requirements. Requests for time change extensions of components on ground-run aircraft will be submitted to AMCOM for disposition.

(3) DA Form 2408-18 (Equipment Inspection List) inspections are required on category A and B aircraft unless a waiver is granted by AMCOM.

*e. Controlled exchange.*

(1) Controlled exchange of serviceable components from category A and B maintenance training aircraft to any flyable aircraft is authorized. These components must be determined serviceable or economically repairable by a qualified inspector and must be of proper configuration and have all modifications applied. The component or assembly removed from a category A or B maintenance aircraft will be replaced with a like component. These actions must receive concurrence from AMCOM.

(2) Controlled exchange of components from maintenance training airframes or maintenance training devices may

be made only between other maintenance training airframes or maintenance training devices. Removal or installation of components listed in TB 1-1500-341-01 will call for the submission of DA Form 2410 (Component Removal and Repair/Overhaul Record) per DA Pam 738-751 and TM 1-1500-328-23.

(3) Accountability of demands will be maintained in the unit PLL for control exchange transactions.

## **Section V**

### **Maintenance of Rail Materiel**

#### **5-26. General**

The term "rail materiel" includes motive power, general rolling stock, and special purpose mobile rail materiel owned and operated by the U.S. Army.

#### **5-27. Maintenance policies**

Unit, DS, GS, and depot maintenance will be accomplished per the policies set forth in chapters 3 and 4 and in this section as supplemented by materiel publications and directives. U.S. Army-owned rail materiel will conform to standards established by Government regulatory bodies in the country where such rail materiel is operated in interchange service and is subject to the rules of such regulatory bodies.

#### **5-28. Maintenance operations**

##### *a. DS and GS maintenance.*

(1) Rail transportation companies that may be expanded by Army mobile rail teams will provide DS and GS maintenance to using units. For support of DA utility rail materiel in CONUS where no support companies are available, the DS and GS maintenance will perform all functions with the mobile rail repair shops. (See AR 56-3.)

(2) The NMP will furnish the services of the mobile rail support shop for DA utility railroads on an "as required" basis and will direct its operation as follows:

(a) Army-owned rail equipment will receive free mobile rail services.

(b) Defense supply depots and other DOD agencies may receive mobile shop services on a reimbursable basis.

(3) DA rolling stock moving over interchange in CONUS will have running repairs performed per AR 56-3.

*b. Depot maintenance.* Depot maintenance will be programmed by the NMP/NICP on the basis of inspections by rail maintenance technicians.

*c. Maintenance reporting and recording.* Maintenance reporting and recording for Army rail materiel will be accomplished in accordance with DA Pam 738-750.

*d. Installations electing not to use mobile rail support shops.* These installations may contract the service to an outside source if cost-effective or may retain the work in-house if qualified personnel are available and support equipment is authorized.

## **Section VI**

### **Maintenance of Communications Systems and Materiel Assigned to FORSCOM, Army Signal Command**

#### **5-29. General guidance**

*a.* This section applies to maintenance of Army fixed and other FORSCOM Army Signal Command (ASC)-assigned telecommunications networks, systems, and automation equipment to include, but not limited to, the following:

- (1) Army portion of the Defense Communications System.
- (2) Theater Communication System (Army).
- (3) Base (post, camp, and station) communications equipment.
- (4) Air defense communications systems (as assigned).
- (5) Army command and control networks.
- (6) Armed forces radio and television service distribution systems.
- (7) Army military affiliate radio systems.
- (8) Army worldwide leased telecommunications facilities.
- (9) INSCOM nontactical materiel.

*Note.* This general guidance is only applicable to grandfathered telecommunications equipment that was the responsibility of U.S. Army Information Systems Command (USAISC) to support as a MACOM. USAISC is now an MSC under FORSCOM renamed ASC. The CG, FORSCOM and the CG, ASC must approve all new maintenance responsibilities.

*b.* The CG, FORSCOM is responsible for—

(1) Maintenance support of all echelons above corps communications equipment assigned as his or her responsibility by HQDA and/or listed in AR 10-87.

(2) Organization and operation of AMSFs supporting CONUS and OCONUS commanders.

- (3) Maintenance support teams.
- (4) Forward area support teams.
- (5) COMSEC logistics support facilities.
- (6) Module and repair activities required for dedicated retail logistics support of organic CE materiel and other electronics materiel as assigned.

### **5-30. Maintenance policies**

- a.* The CG, FORSCOM ASC will approve maintenance levels authorized for all ASC units and CE fixed facilities. The approved maintenance levels are contained in the appropriate unit authorization document.
- b.* Each unit or site will perform maintenance up to the level of maintenance authorized per the MAC and within the constraints of available resources. When approved by the CG, FORSCOM ASC, CLSF will exchange and repair modules and printed circuit boards (PCBs) instead of evacuating them to depots or other external support facilities.
- c.* FORSCOM ASC is responsible for the operation of logistics support for all BASOPS CE systems and materiel unique to the command. ASC CE materiel may be supported by another MACOM or military department facility when it is economically beneficial and responsive to ASC operational requirements or established Defense Communications Agency (DCA) restoration criteria.
- d.* TMDE repair and calibration support will ensure attainment of the minimum goal of 95 percent TMDE availability and provide services responsive to ASC operational requirements or established DCA restoration criteria.

### **5-31. Maintenance facilities**

- a.* Unit-level maintenance at small fixed facilities will be limited to operator maintenance. For other than operator maintenance, these facilities must rely on support from maintenance support teams, forward area support teams, area maintenance and supply facilities, or other support maintenance facilities as designated in appropriate logistics and mission support plans.
- b.* The DS level of maintenance is normally authorized at medium to large manned CE fixed self-sufficient facilities.
- c.* GS maintenance is normally authorized at a large facility and/or isolated CE site or activity that must be provided with a high degree of self-sufficient maintenance. Factors supporting the performance of GS on-site are type of mission, location, equipment density, and nature of materiel. Organic repair of unserviceable modules, PCBs, and hardwired components is accomplished at this level to the maximum extent authorized by the MAC and approved by ASC.
- d.* Specialized repair authority maintenance actions coded L or D per the maintenance allocation chart are performed by maintenance support facilities identified by the NMP. Quick reaction maintenance support to supported activities is furnished through the maximum use of ORF items.
- e.* ASC units are not authorized to perform depot maintenance. ASC CE materiel will be evacuated to DA-designated CONUS depots, to include authorized manufacturer and contractor operated maintenance facilities, for accomplishment of depot-level maintenance. Depot-level maintenance may be performed at the unit's location by depot-level maintenance repair teams.

### **5-32. Area maintenance and supply facility**

FM 4-30.3 establishes AMSF doctrine for GS facilities managed and operated by USASC. AMSF is assigned the mission of furnishing centralized retail supply and maintenance support of ASC telecommunications materiel and other CE materiel as assigned. This includes—

- a.* Furnishing maintenance support for all assigned Army communications materiel above corps level that is not assigned by HQDA to other commands and agencies in overseas areas.
- b.* Furnishing maintenance teams to perform scheduled emergency backup technical assistance and instruction at the CE facility or unit location that is beyond the unit's capability and authorization.
- c.* Maintaining an authorized stockage list of CE supplies and CE repair parts.
- d.* Maintaining approved stock record account (project support account) to receive, store, and issue items on CE bills of materiel.
- e.* Maintaining an approved stock of ORF per AR 710-1 and AR 710-2 in support of fixed facilities and area maintenance and supply facility maintenance programs under FM 4-30.3.
- f.* Maintaining stock record accounts per AR 710-2 and USAISC directives in this regulation.
- g.* Maintaining a capability to provide a training base for specialized CE materiel and to respond to emergency assistance requests from supported units.
- h.* Assisting supported units in correcting faults found during performance evaluations and inspections. AMSF also supports unit maintenance programs to improve and maintain the operational availability of the CE systems and materiel.
- i.* Operating a module and PCB repair section capable of repairing unserviceables through the use of microelectronics repair methods and automatic test equipment.

*j.* Repairing peripheral materiel, such as power and environmental, when not supported by the facility engineer or other area support maintenance units.

### **5-33. Maintenance support team**

The maintenance support team is that activity of an ASC DS or GS maintenance facility that brings mobile maintenance support to CE fixed facilities or other ASC units on a scheduled, emergency, or on-call basis. The CE maintenance support teams are a functional responsibility of AMSF and other authorized command maintenance organizations; COMSEC maintenance support teams will be furnished by the CLSF.

### **5-34. Forward area support team**

The forward area support team is a remotely located extension of the AMSF that performs scheduled and emergency backup maintenance and technical assistance at the CE fixed facility or unit location.

### **5-35. Quality assurance**

All ASC DS and GS maintenance support facilities will institute effective quality control procedures in carrying out HQDA and ASC quality assurance programs. Quality control must be sufficiently independent of maintenance operations to ensure that inspections are not constrained.

## **Section VII**

### **Maintenance of Nontactical Vehicles**

#### **5-36. General**

*a.* Authorized maintenance may be accomplished in transportation motor pool shops, the Internal Mission Materiel Maintenance Activity (IMMMA), local commercial shops, or other Government maintenance activities as jointly determined by the motor pool manager and the installation management officer (IMO). In all cases, warranties are to be used to the maximum extent possible. Detailed policies on management of nontactical vehicles (NTVs) are in AR 58-1.

*b.* Operator inspection and service consists of inspecting and detecting malfunctions that make the vehicle unsafe or unserviceable and includes minor or simple parts replacement and servicing (water, fuel, tires, and battery).

*c.* At those installations having consolidated maintenance shops, all maintenance is the responsibility of the IMO. NTV maintenance may be performed in the transportation motor pool shop but will normally be performed in the consolidated shops.

*d.* ORF support and administrative storage of NTVs is not authorized.

*e.* The MEL for an NTV is in AR 58-1.

#### **5-37. Modifications**

Modifications of an NTV are covered in AR 58-1 and TM 38-600.

#### **5-38. Repair parts supply**

*a.* Repair parts for an NTV are obtained under the provisions of AR 710-2.

*b.* Cannibalization of uneconomically repairable vehicles prior to turn in to the Defense Reutilization and Marketing Office (DRMO) is limited to those serviceable parts immediately needed to repair inoperable vehicles.

*c.* Major commanders in overseas areas may authorize controlled exchange of repair parts from NTVs only when those repair parts are not otherwise available.

## **Section VIII**

### **Maintenance of Training Aids and Devices and Visual Information Equipment and Systems**

#### **5-39. Training aids and devices**

This section provides maintenance policy for training aids and devices. It supplements policies in AR 350-38, AR 700-127, and AR 25-1. Training aids and devices used by the U.S. Army can be categorized as follows:

*a.* Training aids and devices assigned to a MTOE unit are type classified and include simulators or end items.

*b.* Training aids and devices managed by TDA activities include—

(1) Non-type-classified training aids and devices developed or commercially acquired to support general military training and training on more than one type item of materiel. These are usually assigned to and maintained by training and visual information support centers (T/VISC) for loan to units and activities.

(2) Type-classified training aids and devices used to support a special training requirement.

*c.* Maintenance policy is as follows:

(1) Type-classified and non-type-classified training aids and devices will be maintained per this regulation.

(2) Operator/crew training equipment will be maintained to the Army maintenance standard outlined in paragraph 3–2 and the turn-in/transfer standard in paragraph 4–6.

(3) Equipment (end items and major assemblies) that is frequently disassembled and assembled for instructional purposes will not be maintained to Army maintenance standard. Additionally, this equipment will be transferred or turned in to the wholesale system under condition code “F” and not –10/–20. If required for reissue, equipment will be routed through depot maintenance before issue. Equipment will remain disassembled for instructional purposes.

(4) A maintenance plan as part of the logistic support plan will be developed and fielded with the materiel. Commercial off-the-shelf materiel procurement will include a maintenance support plan or justification for contract maintenance or inter-Service support.

(5) Type classified training aids and devices that are identified on MTOE or TDA documents will be maintained per the MAC. Support requirements beyond the user’s authority or capability will be referred to the supporting IMMA.

(6) Locally fabricated training aids and devices will be maintained by the T/VISC. Maintenance above the capability of the T/VISC will be referred to the supporting IMMA.

(7) User commands are responsible for programming and budgeting funds for contract maintenance support for all training aids and devices under their control.

(8) Depot-level maintenance will be furnished by USAMC.

#### **5–40. Visual information equipment and systems**

This paragraph provides maintenance policy for visual information (VI) equipment and systems. It supplements policies in AR 700–127 and AR 25–1.

*a.* VI materiel includes photographic, television, audio, and graphic art items that furnish an audiovisual product or service.

*b.* The Office of the Chief Information Officer, G–6 will validate authorization of type-classified VI materiel prior to documentation in a common table of allowances (CTA), TDA, or TOE/MTOE to ensure compliance with DODD 5040.2.

*c.* VI materiel assigned to an audiovisual facility or other TDA activity, including broadcast radio and television, will be commercially acquired. The logistics supportability of commercially acquired materiel is the responsibility of the procuring activity. Local procurement will be coordinated with the local common support audiovisual activity for consolidation of contracts for maintenance services and adherence to standards and VI architecture. (DA Pam 25–91 provides guidance.) Broadcast radio and television materiel and systems costing over \$5,000 will be procured, managed, and supported by the Television-Audio Support Activity, the Office of the Assistant Secretary of Defense (Public Affairs) (OASD(PA)), and the American Forces Information Service.

*d.* Maintenance policy is as follows:

(1) A maintenance plan as part of the logistic support plan will be developed and fielded with the materiel. Commercial off-the-shelf materiel procurement will include the equivalent of a maintenance support plan or justification for contract maintenance or inter-Service support.

(2) Type-classified VI materiel will be maintained per the MAC. Support requirements beyond the user’s authority or capability and all non-type-classified audiovisual materiel will be referred to the common support VI activity or Director of Information Management (DOIM).

(3) The training community may, at the option of the MACOM, manage maintenance of VI equipment and activities integrated with training device support activities. Otherwise, contract requirements will be submitted to the supporting DOIM, who will coordinate the support.

(4) User commands are responsible for contract maintenance support for all VI materiel under their control and are responsible for budgeting funds for same. Funds will be made available by the user to the supporting DOIM or VI activity to support its contract efforts.

### **Section IX**

#### **Maintenance of Conventional Ammunition**

##### **5–41. General**

*a.* Ammunition maintenance consists of all actions necessary to retain ammunition in, or restore it to, an FMC condition.

*b.* Provisions must be made to accomplish maintenance at the storage location to the maximum extent possible.

*c.* The maintenance program of an activity will be based on requirements determined by theater inventory control point/NICP. The maintenance to be performed by an activity will be based on the activity’s assigned mission or as directed by the NMP.

*d.* The condition code of ammunition will be determined by surveillance inspection or as directed by NMP.

## **5-42. Maintenance policies**

*a.* Unit maintenance will be performed by all activities having conventional ammunition on hand, including using units. Unit maintenance is performed to prevent deterioration of ammunition due to rough handling and exposure.

*b.* Ammunition companies will perform DS maintenance. DS maintenance on ammunition will include inspection, test, service (preservation and packaging), and repair of stocks stored by the ammunition companies. Ammunition companies normally perform a greater volume of DS maintenance when operating in a rear, semipermanent installation where more time, materiel, and personnel are available. The companies are also responsible for providing technical assistance to using units on their maintenance responsibilities.

*c.* Conventional ammunition renovation detachments will normally furnish GS maintenance on conventional ammunition in large ammunition supply points or depot complexes located in the communications zone. However, when practical, they may be deployed forward to perform maintenance rather than evacuate unserviceable ammunition.

*d.* Depot maintenance on ammunition consists of actions primarily comprised of renovation, modification, or reconfiguration. Depot maintenance normally will not be performed in an active theater; it is usually performed in CONUS or overseas theaters of long standing. Selected overseas installations coordinate with USAMC to perform depot maintenance that augments the procurement program.

*e.* Maintenance reporting for conventional ammunition is listed in accordance with DA Pam 738-750 and AR 700-19.

## **5-43. Maintenance planning**

*a.* Conventional ammunition units will perform maintenance and demilitarization of ammunition only after receipt of a properly validated work authorization. Work authorization can be a DA Form 2407, DA Form 2415 (Ammunition Condition Report), or letter of authorization. An assignment sheet (work order) can be added where a validated work authorization does not furnish sufficient information. The assignment sheet will be used within the organization and will normally provide for, but is not limited to, the following:

- (1) The scope of the maintenance work.
- (2) The lot number and quantity of rounds to be processed.
- (3) The lot number and quantity of replacement parts or components to be used.
- (4) Special instructions on inspection, operations, hazards, and disposition of unserviceable components resulting from operations.
- (5) Operations that must be performed to process the material, consisting of replacing parts, painting, changing nomenclature, adding a suffix, preparing data cards, and so forth.
- (6) Materials to complete the work, including quantity.

*b.* DMWRs for renovation or disposal of ammunition are composed of a series of sheets in the form of a pamphlet. Each sheet is an operational study of the technical features of the operation to be accomplished. The DMWR is approved and issued by the U.S. Army Tank, Automotive, and Armament Command-Armament Research Development and Engineering Center (TACOM-ARDEC). The DMWR will be used as a guide for the ammunition officer preparing the details and procedures for completing the work in a theater of operation. DMWRs and letters of instruction are the only procedural guidance authorized for performance of maintenance and demilitarization at installations. Exceptions to this policy must have the approval of the NMP.

## **Section X**

### **Maintenance of Test, Measurement, and Diagnostic Equipment**

#### **5-44. General**

*a.* This section provides policy for the support of Army TMDE.

*b.* USAMC will furnish calibration and repair support for general and selected special purpose TMDE under AR 750-43, TB 750-25, and TB 43-180.

#### **5-45. Support concept**

The support concept for general purpose TMDE will make maximum use of existing assets and Army calibration and repair system standards.

#### **5-46. TMDE support and management**

TMDE repair support will normally be based on the concept that repair should be accomplished by the element designated in TB 43-180 as being responsible for calibration support. TMDE support will be as follows:

*a.* All TMDE owners or users will do unit-level maintenance on organic TMDE. General purpose TMDE and selected special purpose TMDE repair support will be obtained from the area calibration repair center responsible for supporting the geographic area where the TMDE owner or user is located. Repair support for the remaining special purpose TMDE will be obtained from the maintenance organization responsible for maintaining the associated system or end item. Medical activities will refer to AR 40-61.



b. DS, GS, and AVIM units will do unit maintenance on organic TMDE and furnish support services for organic and supported units special purpose TMDE.

c. Complex TMDE requiring multilevel maintenance support will be repaired and calibrated using assets from all required levels.

## **Section XI**

### **Maintenance of Information Technology**

#### **5-47. General**

a. All embedded tactical information technology (IT) will be maintained using the Army maintenance system. Embedded IT is a system or component that is specifically designed and produced to perform functions as an integrated part of noninformation systems. Embedded IT has no general purpose capability outside the system of which it is a part and is not separable for other uses without redesign or modification.

b. All AIS (STAMIS, non-STAMIS, nonembedded, nontactical, and office automation equipment) will be maintained as follows:

(1) The unit AIS maintenance personnel, in coordination with the CSSAMO, will support the user/operator in diagnosis and restoration of STAMIS computer systems to an operational status. Failed line replacement units (LRUs) will then be turned in to the supporting SSA.

(2) The CSSAMO, in coordination with the DS maintainer, will, to the greatest extent possible, provide a mobile support team to restore and repair STAMIS systems on-site.

(3) The CSSAMO, in coordination with the DS maintenance shop officer, may on a case-by-case basis perform hardware repair of STAMIS systems to facilitate systems availability.

(4) Software-related problems will be resolved in coordination with the supporting CSSAMO, PAS, or other appropriate automation office.

(5) The SSA will issue a replacement STAMIS LRU to the unit AIS maintenance personnel from on-hand STAMIS computer exchange (SCX) assets and work order the faulty LRU to the supporting DS maintenance activity for repair. Non-STAMIS LRU stockage will be limited, and the SSA will issue a due-out against the work order and transfer the work order and due-out of the faulty component to the DS maintenance activity. SSAs will not issue a STAMIS LRU for computer systems that are used for non-STAMIS applications.

(6) If an LRU is under warranty, it will be screened by the DS maintenance or CSSAMO for no evidence of failure (NEOF). If an LRU under warranty is found to be unserviceable after testing, and NEOF is not evident, the warrantor should be contacted and the item returned to the designated depot/FRA or warranty provider. In these cases, the DS maintenance activity will contact its designated depot/FRA/warranty provider for disposition instruction. LRUs not under warranty will be repaired by the DS maintenance activity and returned to stock in the SSA. Turn-in of LRUs found NRTS by the DS maintenance activity will be coordinated with the designated depot/FRA/customer service organization (CSO). The CSO, within the guidelines for MEL defined in paragraph 4-5, will provide disposition instructions, which may include warranty guidance.

c. The U.S. Army Corps of Engineers Command (USACECOM) Logistics and Readiness Center is the Army lead organization for STAMIS logistics sustainability.

d. Any computers procured by a MACOM to support a tactical STAMIS may be repaired using these procedures, provided the MACOM has coordinated and funded that support with the depot/FRA through the appropriate USAMC MSC. Following appropriate approval, the CSO will maintain information on systems that are authorized repair under these procedures.

e. The SCX is composed of commercial off-the-shelf (COTS) computer systems and their associated peripheral equipment used to operate or support tactical STAMIS applications. SCX stockage will be located at DS SSAs and designated depots/FRAs. It will provide direct exchange support for the extended depot repair process.

f. The electronics sustainment support center (ESSC) Tobyhanna Army Depot FRA is an integrated maintenance activity that provides the field with a dedicated support structure for STAMIS hardware. The FRA also supports tier III office automation equipment at selected installations and when deployed as part of the AMC LSE.

#### **5-48. Repair parts supply for IT**

a. Repair parts for IT are obtained under provisions of AR 710-2.

b. Cannibalization of uneconomically repairable IT prior to turn in to DRMO is limited to those serviceable parts immediately needed to repair inoperable IT.

c. MACOM commanders may authorize controlled exchange of IT repair parts based on automation systems readiness.

#### **5-49. Army Warranty Program for IT**

a. The overall policies and procedures for the Army Warranty Program are contained in AR 700-139, which requires that items for Army use should be acquired with warranties only when the warranty is in the Army's best

interest. The decision must be made on a case-by-case basis. Acquiring commands or activities will establish local warranty implementation procedures.

*b.* In warranty applications, unit readiness and mission effectiveness will take priority. If the maintenance activity is not able to get an effective response (within the warranty-specified timeframes), the maintenance activity will contact the acquiring command or activity for resolution. When resolution is not timely enough to meet mission requirements, the maintenance activity commander may authorize repair of the item and will notify the acquiring command or activity in writing of the necessity to repair the item now and settle any warranty issues later.

*c.* IT warranties to the greatest extent possible will be structured to allow on-site or mail-in processes to maintain their warranties. FRAs are authorized at the AMC MSC Commander's discretion to facilitate IT repairs by the warranty vendors. FRAs should take action to become OEM certified warranty providers. DS maintenance will be performed on automation systems hardware when it does not violate the warranty.

## **5-50. Base operations IT**

IT obtained for BASOPS support through the Information Management Area process is supported through the directors of information management/CIO/G-6. Although these systems are not part of tactical automation, maintenance may be obtained through the depot after coordination with the appropriate USAMC MSC.

## **Section XII**

### **Maintenance of Organization Clothing and Individual Equipment**

#### **5-51. Maintenance policy**

*a.* The organization clothing and individual equipment (OCIE) issued to soldiers will be inspected to determine serviceability in accordance with AR 700-84 and DA Pam 710-2-1. The individual to whom the organization clothing or equipment is assigned must perform normal maintenance that would reasonably be expected to be performed within a unit. This maintenance includes cleaning, spot removal, repair of tears or rips, and replacement of buttons. Using unit and DS maintenance and repair procedures for OCIE are in TM 10-8400-203-23.

*b.* Each installation or activity will ensure clothing and materiel beyond organizational repair capability is turned in to a central location for either repair and return to stock or classification as unserviceable and turned in to DRMO.

*c.* The U.S. Property and Fiscal Officer (USPFO) may authorize negotiation of local contracts for maintaining clothing and equipment for the ARNG as follows:

(1) Minor alterations and repairs of individual clothing.

(2) Minor repairs of USPFO stocks to reclassify items to a serviceable status for reissue.

*d.* Major alterations for the purpose of modifying items will require prior approval of CNGB.

*e.* Laundry and dry cleaning services are authorized as follows:

(1) Laundry services in support of AT per NGB Pam 350-1.

(2) Laundry and dry cleaning services in support of IDT should be obtained at the lowest possible cost for the following items:

(*a*) White organizational clothing and equipment issued to medical and food service personnel.

(*b*) Sheets, pillowcases, and mattress covers.

(*c*) USPFO stocks of serviceable individual and organizational clothing and equipment prior to reissue.

(*d*) Individual clothing for interment of deceased personnel when Federal funds are authorized.

(*e*) Blankets and sleeping bags.

(*f*) Army band distinctive uniforms as authorized by CTA 50-900.

#### **5-52. Maintenance expenditure limits**

Maintenance expenditure limits can be found in TB 43-0002-27.

## **Section XIII**

### **Maintenance of Army Tactical C4IEWS Materiel**

#### **5-53. General**

*a.* This section applies to the maintenance of Army tactical communications, command, control, computer, intelligence, electronic warfare, and sensors (C4IEWS) equipment, including MTOE, TDA, and loaned materiel. C4IEWS equipment includes, but is not limited to, the following:

(1) Army intelligence and electronic warfare (IEW) equipment fielded to corps, divisions, armored cavalry regiments, separate brigades, and battalions.

(2) INSCOM tactical IEW equipment, including select equipment items in U.S. Army field stations and regional support centers (RSCs).

(3) MACOM-developed, -procured, and -fielded IEW equipment, including nondevelopmental items and COTS items.

(4) Other selected C4IEWS equipment that receives GS/depot forward support from the ESSC.

*b.* The CG, USAMC is responsible for the support of Army IEW materiel with the USACECOM Logistics and Readiness Center being designated as the Army lead organization for tactical IEW logistics sustainment.

(1) The ESSC IEW regional support center (RSC) is an integrated repair activity that provides the field with a dedicated support structure for tactical IEW systems as well as selected C4IEWS equipment.

(2) Joint operations equipment developed for special operations forces units are exempt from the requirements of this section.

*c.* The IEW GS RSC is an integrated repair activity that provides the field with a dedicated support structure for low-density IEW systems.

#### **5-54. IEW maintenance policies**

*a.* USACECOM has sole responsibility within the Army for IEW logistics sustainment. As part of this responsibility, all sustainment contracts will be consolidated under the control of USACECOM. Centralized support for IEW materiel will be extended to all fielded systems, including systems fielded for prototyping analysis, independent of current level of acquisition management.

*b.* The emerging generation of IEW systems requires a sustainment concept that provides for repair as far forward on the battlefield as possible. The RSC provides this support to the field as well as system and maintenance troubleshooting and post-production software support (PPSS) repair, along with a reconfiguration capability. All of these capabilities will be integrated into the RSC whenever possible.

#### **5-55. IEW unit maintenance**

*a.* Assigned IEW unit maintenance personnel perform unit and DS levels of maintenance. This typically includes replacement of LRUs, circuit card assemblies, and piece parts when authorized by the MAC.

*b.* IEW maintenance activities are authorized to establish and maintain bench and shop stock, per AR 710-2, for repair parts supporting IEW equipment repair.

*c.* Shop stock will be maintained using the ULLS and SAMS.

*d.* Tools and TMDE required for the maintenance of IEW materiel are authorized by appropriate MTOE, TDA, TM, or letter authorization. Materiel will be obtained per AR 710-2.

*e.* Maintenance requirements beyond the unit level require a DA Form 2407/5990-E to be processed through the unit's DS SAMS to the GS RSC.

#### **5-56. IEW GS RSC maintenance**

The IEW RSC will centralize IEW maintenance management and maximize the integration of the military GS maintainers in the Corps Support Command (COSCOM) with the contractors/civilians in the IEW RSC. The IEW RSC will provide maintenance support for items not repairable at the IEW unit level. The RSC is a tailored activity based on the type of units and equipment supported in the regional area.

## **Chapter 6**

### **Life Cycle Maintenance Support**

#### **6-1. General**

*a.* Total ownership cost reduction is an Army objective throughout the life cycle of the weapon system. The Chief of Staff and the Army Acquisition Executive identified the reduction of operating and support costs as a high priority and vital to realizing our modernization efforts. The system's total ownership cost (TOC) includes costs associated with acquiring, operating, modifying, maintaining, supplying, and disposing of weapon/materiel systems. Reducing TOC is key not only to reducing fiscal demands on the operational commander but also to generating savings that can be reinvested in support of Army modernization objectives.

*b.* This chapter contains policy and guidance for establishing and sustaining maintenance support across the life cycle of Army materiel. Comprehensive maintenance support throughout the entire life cycle is required to assure that materiel can be maintained in its operational environment with minimum resources for achieving operational readiness and sustainability. The engineering and technical capability required to ensure Army equipment is maintainable within the Army standard maintenance system is called systems technical support (STS) for systems that are in production and sustainment systems technical support (SSTS) when systems are out of production. Engineering and technical support capabilities include the following functions:

(1) Conduct of logistics support analyses.

(2) Development and update of the maintenance concept, including the level of repair analysis (LORA).

- (3) Development and update of the maintenance support plan.
- (4) Development and update of the depot maintenance support plan.
- (5) Development and update of logistics management data.
- (6) Development and update of the maintenance allocation chart.
- (7) Development and update of all equipment publications, including the depot maintenance work requirements.
- (8) Establishment and sustainment of a stock pile reliability program.
- (9) Management of the Army's sample data collection program.
- (10) Providing logistics assistance representatives (LARs) for major weapon systems and/or commodities of equipment.
- (11) Processing EIRs and QDRs.
- (12) Providing engineering services in support of approved MWOs.

## **6-2. Maintenance support initiation**

During the acquisition phase of the weapon system life cycle, the MATDEV will—

- a.* Provide materiel maintenance inputs to—
  - (1) The Test and Evaluation Master Plan.
  - (2) The program management documentation, including the Program Acquisition Plan.
  - (3) Requests for proposal (RFP), quotation, and contracts.
  - (4) Baseline cost estimates.
  - (5) The supportability strategy (SS) in accordance with AR 700-127.
  - (6) The RAM rationale report.
  - (7) The SOR analysis.
  - (8) The core determination analysis.
- b.* Analyze maintenance and maintainability goals and objectives and provide input to the CBTDEV for finalizing the maintenance/logistics support concept portions of requirement documents. That is—
  - (1) Translate system performance requirements affecting supportability into design considerations and characteristics. The MATDEV should consider RAM with specific emphasis on modularity; for example, ease and speed of replacement by user, built-in-fault isolation, and design or selection of modules and parts that are operationally and economically justifiable for discard at failure.
  - (2) Design or procure embedded diagnostic, prognostic, and maintenance information systems inherent in the system, whenever possible.
  - (3) Acquire all logistics data relevant to the materiel system and its associated support items for use in the maintenance planning process.
  - (4) Plan and participate in the logistics demonstration and applicable developmental tests (DTs) and confirm adequacy of the materiel system maintenance concept and plan.
  - (5) Ensure development and fielding of system support package (SSP).
  - (6) Ensure missile stockpile reliability programs are established.

## **6-3. Establishing and sustaining maintenance support requirements**

Maintenance activities will be established and will perform the functions and tasks necessary to develop and sustain adequate maintenance support for new materiel or fielded material across the entire life cycle. Maintenance activities will—

- a.* Participate in all phases of the materiel systems development, production, and sustainment.
- b.* Provide maintenance requirements/constraints to the system acquisition plan and contract acquisition package.
- c.* Develop the maintenance aspects of the logistics support system including BDAR.
- d.* Participate in the Test and Evaluation Integrated Product Team and provide requirements to test planners for use in DT/operational test (OT) and for evaluating the SSP.
- e.* Prepare and execute the maintenance portion of the SS and other plans, as appropriate, during the materiel acquisition process.
- f.* Conduct and sponsor research programs to improve the performance of both maintenance engineering and maintenance operations.
- g.* Provide technical expertise to resolve problems or respond to requests for information from user MACOMs concerning support of materiel systems.
- h.* Evaluate and identify calibration requirements of TMDE, ensure availability of calibration support, and ensure that TMDE acquisition is consistent with AR 750-43.
- i.* Generate maintenance workforce performance data on fielded systems from all levels of maintenance, including depot level, for use in establishing life-cycle estimates to support development of new weapons/equipment, application

of MWO to fielded equipment, and updating float and failure factors. Identify areas requiring maintenance engineering actions and provide appropriate input to the system manager.

j. Ensure that RCM criteria are used to develop maintenance standards and the MAC per DA Pam 750-40.

k. Identify and budget for depot (and FRA) maintenance plant equipment (DMPE).

l. Establish and conduct pilot industrial base maintenance programs.

m. Develop and update technical criteria to prescribe the scope, depth, and frequency of inspection and maintenance operations to be performed on materiel systems. Technical criteria for the performance of maintenance operations will—

(1) Be established on the basis of quantitative control parameters, operating time, miles traveled, rounds fired, usage rate, local environmental conditions, elapsed calendar time, equipment conditions, or a combination of any of the preceding.

(2) Be published in technical publications.

(3) Be evaluated periodically and changed as required.

(4) Be used to determine economic repair or replacement of equipment.

(5) Prescribe guidelines for inspection, reclamation, condemnation, and demilitarization of equipment.

(6) Identify items requiring float support and compute initial float factor.

(7) Identify items requiring an MEL and demilitarization instructions.

#### **6-4. Contract and civilian maintenance support**

a. *Contract and civilian maintenance support.* Contractors, Department of the Army civilians, and local national augmentation may be used in a supporting role to meet the defense objective of ensuring that enough trained personnel are available to mobilize the DOD-wide force and support structure per AR 70-1, AR 700-127, and the requirements of this regulation.

(1) Maintenance will be performed by military personnel in areas forward of the division rear boundary. For support of operations other than war, military and contracted maintenance can be performed throughout the area of operation in accordance with the commander's discretion. Contracted maintenance will normally not be allowed for levels of maintenance below DS. Soldiers (TOE units) will maintain equipment issued to them below DS levels. Civilians will not be permanently stationed forward of the division rear boundary. (See AR 715-9.) Civilians may travel forward of the division rear boundary on a case-by-case basis as individual equipment failures occur to provide temporary on-site maintenance and technical advice, for example, wholesale-level maintenance assistance teams and modification application teams.

(2) Behind the division rear boundary, in addition to military personnel, civilian maintenance personnel (contract, TDA, local nationals, and so on) may be acceptable as a prudent risk on the probability of maintenance services being continued in wartime and in support of MOOTW.

b. *Private enterprise.* The Army will rely on the competitive private enterprise system, both U.S. and foreign, for maintenance support service to the maximum extent that is consistent with effective and efficient accomplishment of Army programs and missions.

c. *Foreign enterprise.* The use of foreign private enterprise will be limited to the following situations:

(1) DOD organic or DOD contract maintenance support activities lack the capacity to perform the task in the time required.

(2) Use of foreign private enterprise has been predetermined by international agreement.

(3) The necessity for establishing an alternate foreign source has been formally determined by DOD as being in the best interests of U.S. strategic or tactical objectives.

(4) Use of foreign private enterprise will not affect the development or maintenance of U.S. national capabilities.

(5) The use of foreign contractual services will be contingent on U.S. contracting authority certification of quality, capability, and capacity.

d. *Exceptions.* Contract maintenance will not be used when—

(1) In-house activities are necessary for individual and unit training of military personnel.

(2) Contract maintenance support will result in higher cost of current maintenance support to the Army than organic support.

(3) The product or service is available from another DOD component or other Federal department or agency.

#### **6-5. Planning for contractor support, fielding/post fielding**

a. Logistics support of Army materiel performed under contract by commercial organizations, including the original manufacturer, is considered contractor support. Support may include materiel and facilities as well as services such as maintenance, supply, distribution, training, software support, repair, overhaul, and the collection and development of maintenance data as required. Contractor maintenance normally will not be allowed below DS.

b. The decision to use contractor maintenance support is accomplished as part of the SOR analysis during ILS process in accordance with AR 700-127 and must be documented as part of the milestone B ASARC.

c. Proposals for contract maintenance support of classified equipment:

(1) All contract maintenance support of COMSEC, SIGINT, and EW equipment must undergo an assessment of risks to national security before a cost study is performed to use commercial maintenance sources. The installation security manager in coordination with the MACOM security and commercial activity managers must conduct this special risk assessment. NSA must approve this assessment. The proposal—including PWSs with additional information identifying the COMSEC/SIGINT and EW equipment, density supported, and levels of maintenance to be performed—should be submitted through the appropriate USAMC commodity manager and Deputy Chief of Staff G-3, ATTN: DAMO-FDI, 400 Army Pentagon, Washington, DC 20310-0400, to the Director, National Security Agency, ATTN: S-04, Fort Meade, MD 20755-6000.

(2) Classified equipment not under NSA cognizance being considered for maintenance support contracts to contractors other than original equipment manufacturers will be given an assessment of risk as prescribed above.

#### **6-6. Depot maintenance source of repair selection**

Depot maintenance SOR will be made in accordance with paragraph 8-4 of this regulation.

#### **6-7. Maintenance support plan**

a. Maintenance is an integral element of the SS. (See AR 70-1, AR 700-127, and AR 700-139.) The maintenance support plan (MSP) is a portion of the SS. The SS is prepared before milestone B in the materiel acquisition process per DA Pam 700-55. It is updated and expanded periodically as the system matures during the life cycle.

b. The MSP is based on the maintenance/logistics concept contained in the requirement document. In developing alternatives and selecting a final maintenance concept, the MATDEV, in coordination with the CBTDEV, will evaluate factors such as—

- (1) Compatibility with the Army maintenance system at present and planned.
- (2) Complexity of the materiel system.
- (3) Mobility and transportability requirements.
- (4) Operational readiness objectives.
- (5) Operational and logistics environment in which the system will operate.
- (6) Criticality of the materiel system.
- (7) Support concept for subsystems.
- (8) Projected operating and support cost.
- (9) Resource requirements.
- (10) Requirement for maintenance float.
- (11) Requirement for warranty.
- (12) Requirement for AOAP.
- (13) Requirement for total package fielding.
- (14) Requirement for a weapon system designator code.
- (15) Requirement for MEL.
- (16) Requirement for demilitarization instructions.

c. The determination of the repair level within the Army maintenance system is an essential element of the logistics maintenance information (LMI). LMI will include a LORA or other analyses, as required by AR 700-127. LORA is used to determine the optimum maintenance levels for repair actions and recovery of the end item and components. The LORA considers availability or requirements for additional tools, support equipment, and skills in intended supporting units. The LORA should address the requirement to minimize additional special tools and test equipment for new equipment. As part of the post deployment evaluation, the LORA will be rerun no earlier than 1 year and no later than 3 years from first unit equipped date (FUED), using actual reliability data from fielded equipment. The LORA will be rerun every 5 years throughout the equipment life cycle. The MACs will be updated to reflect any changes in the LORA outcome. The guidance in chapter 3 of this regulation applies in allocating maintenance operations and resources.

d. Maintenance allocation chart:

(1) The MAC is an output of the LORA. It reflects the approved maintenance concept for an end item/weapon system or subsystem. It specifies the lowest level of the Army maintenance system authorized to perform complete repair of a specific maintenance task.

(2) The preliminary MAC should be included in the MSP. As the acquisition program progresses, and both design and support planning becomes firmer, the MAC will be updated and, if appropriate, included in the updated MSP.

(3) Draft MACs and revised MACs will be coordinated with the CBTDEV (appropriate TRADOC activity) to assure that support planning complies with the system maintenance support concept and permits TRADOC to make adjustments, as needed.

(4) All final draft MACs and revised MACs will be approved by HQ USAMC with concurrence from TRADOC.

## **6-8. Depot maintenance support plan**

*a.* The purpose of the depot maintenance support plan (DMSP), an integral part of the SS, is to ensure provisions for required depot maintenance. This plan identifies all installations and FRAs to be used for depot maintenance support of the item and the type of workload to be assigned to each based on SOR decision logic.

*b.* The objectives of the plan are to identify and schedule the preparation of overhaul standards and procedures and acquisition of peculiar depot maintenance equipment, facilities, TMDE, and personnel training.

*c.* The DMSP encompasses all phases of the life cycle of an item of new materiel. Planning actions and a sample plan are contained in DA Pam 700-55. The DMSP is updated as changes become necessary.

*d.* Consideration will be given to the use of inter-Service support to provide maintenance support services per chapter 4, section V of this regulation.

*e.* Full depot maintenance support will begin by FUED for all items identified as depot-level reparable. If organic support will not be available by FUED, then interim contractor support is allowed for up to 3 years.

## **6-9. Logistic management information**

*a.* Maintenance support activities personnel will ensure a balanced logistics support program is planned and executed at the least cost to the Government.

*b.* AR 700-127 provides policy guidance on the use of this analysis technique during materiel acquisition. Maintenance activities will develop logistics management information requirements considering the ILS elements. Maintenance activities will review and approve all logistics information developed by the MATDEV.

*c.* Maintenance support costs related to weapon system or equipment end-item system performance data should be analyzed as part of the LMI process during acquisition. The LMI process will be extended in enough depth to provide a database that will identify skills and any supplementary training materiel required.

*d.* The LMI is a planned series of tasks performed to examine all elements of a proposed system and to influence the design so that the system and support can be provided at an affordable cost. RCM is an element of this process. RCM will be applied to all acquisition programs as part of logistics support analysis.

*e.* The RCM will be used to establish a systematic approach for identifying and developing scheduled/preventive maintenance tasks. The program will be monitored to ensure continued update of scheduled/preventive maintenance requirements based on design change, tools or maintenance concepts, or structure of maintenance units.

## **6-10. Warranty application during acquisition**

*a.* The decision to have warranty coverage for new equipment is to be made early during the acquisition program. Warranties should be for the minimum time period sufficient to allow for obtaining the necessary tools and the training of organic personnel. An analysis must be performed and documented to ensure the warranty supplied is the most cost-effective alternative. Contract warranty requirements should conform to the established logistics support concept for the materiel to avoid unnecessary costs during early logistical support of systems. Warranties should be developed and administered per AR 700-139 and Federal Acquisition Regulation.

*b.* The MATDEV will ensure warranty information is provided to the field.

*c.* DA Pam 738-750 and DA Pam 738-751 contain instructions for submitting warranty claim actions.

## **6-11. Maintenance equipment publications**

*a.* Maintenance requirements are to be developed, coordinated, published, and updated for each materiel system and supporting TMDE in equipment technical publications. This includes the development of emerging electronic media known as ETMs and IETMs.

*b.* Equipment publications provide technical guidance for the operation, evaluation, maintenance, and repair parts support of the materiel system, including modifications and BDAR.

*c.* Equipment technical publications will delineate and describe, as applicable—

- (1) Each maintenance task (scheduled and unscheduled).
- (2) The materials, standard time, and workmanship required.
- (3) Methods and practices to be used in completing maintenance tasks.
- (4) Safety and other precautions to be observed.
- (5) Wear limits, fits, tolerances, and other inspection criteria.
- (6) Calibration requirements for special and general-purpose TMDE.
- (7) Desired postrepair operational performance standards.
- (8) Nuclear hardness maintenance and surveillance requirements.
- (9) Preservation of NBC warfare resistance.
- (10) Storage requirements.
- (11) Fault isolation.

*d.* Procedures will be written in enough detail to establish technical competence required in each level of maintenance operation.

e. Requirements to repair to the national maintenance standard for field-level reparable will be developed in accordance with the best commercial practices, coordinated with the quality assurance and safety activities, and published as an NMWR.

f. Requirements for depot maintenance will be developed in accordance with best commercial practices, coordinated with the quality assurance and safety activities, and published as a depot maintenance work requirement.

g. Contractor support should be considered only if the SOR analysis shows it to be the most cost-effective method for depot support per AR 700-127. The use of contractor manuals should be considered if they meet the overhaul and recapitalization requirements before developing NMWRs or modifying depot maintenance work requirements and developing or modifying depot capability.

h. All maintenance requirements and tasks will be developed per RCM principles to ensure preservation of inherent design reliability and safety at least expenditure of resources at all levels of maintenance. The RCM program is concerned with identifying those design practices that minimize preventive maintenance workload and avoid those that increase it. The RCM analysis furnishes initial scheduled maintenance requirements based on engineering information.

i. PMCS tables provide operator/crew and using unit maintenance personnel with technically sound guidance for determining and preserving full mission capability of their equipment. They are to be prepared per RCM principles. PMCS task times will be recorded and maintained in the logistics database or other systems as appropriate.

j. Equipment for which standard TMs have not been developed will conform to established maintenance quality requirements. AR 385-55 lists safety checks that must be included in establishing maintenance requirements.

k. Scheduled/preventive maintenance of any kind is RAM-related support concept. The purpose of scheduled/preventive maintenance is to avoid premature failure of equipment and sustain the inherent reliability designed and manufactured into the equipment. Scheduled maintenance programs for weapon and equipment end items will be developed, applied, and managed by all MATDEVs using RCM.

l. Age exploration is that part of the RCM program that occurs after fielding. It is intended to update, as necessary, the initial scheduled maintenance requirements.

(1) The materiel proponent will initiate and maintain an age exploration program as part of RCM. The RCM analysis furnishes initial scheduled maintenance requirements based on engineering information. Unique item tracking data and usage information provides initial feeder input for age exploration.

(2) An age exploration program will be established to address the following steps that make up the program:

(a) Selection of candidates for age exploration.

(b) Design of the age exploration task.

(c) Collection of required data.

(d) Conduct data analysis.

(e) Apply analysis results to maintenance tasks.

(f) Determine the number of economic repairs, overhauls, or economic service life of equipment.

(g) Adjust expenditure limits in technical bulletins.

m. Equipment publications are essential segments of the support systems for all materiel systems. These publications are also a part of the SSP and are tested during DT and OT. Their adequacy will be addressed in test reports.

n. Over the materiel life cycle, logistics management information will be used as source data for developing and updating equipment publications. Those source data will also be used in preparing and updating work measurement standards, quality assurance criteria, methods and standards, and depot maintenance work requirements/NMWRs.

o. Equipment publications will be developed and updated by publication personnel and published for items as applicable. MWOs will be prepared to authorize application of mandatory modifications to equipment. Depot maintenance work requirements will be prepared only for materiel for which depot maintenance functions are listed in the MAC. The MATDEV will verify equipment publications in coordination with the appropriate TRADOC proponent school to ensure contractor compliance with contract requirements. User concerns regarding incomplete or faulty publications will be resolved prior to printing.

p. The RPSTL and narrative portion of the equipment publications will support and be consistent with the MAC. The RPSTL will list all materiel that may be stocked as authorized stockage list/prescribed load list materiel by NSN.

q. Maximum use will be made of manufacturer manuals for commercial materiel procured or leased off-the-shelf for use at all levels of maintenance. To the greatest extent feasible, manufacturer manuals will be compatible with emerging electronic publishing systems and within the focus of the Joint Computer Aided Logistics System (JCALS). PMCS, MACs, RPSTLs (including NSNs), work measurement standards, and similar specialized data will supplement them as necessary. The MATDEV or other proponent, in coordination with CBTDEV, will determine when COTS manuals are acceptable for maintenance purposes. Procurement of COTS manuals and supplemented COTS manuals is prescribed in AR 25-30. COTS manuals may be used during testing and evaluation when it has been determined that these are adequate for field use per AR 25-30 and MIL-HDBK-1221. COTS manuals will be 100 percent hands-on verified by TRADOC target audience soldiers to ensure their usability in the military environment.

r. All equipment publications will be coordinated with the appropriate materiel safety director to assure that proper warnings, cautions, and limitations have been included.



s. Materiel procured and managed by the Defense Logistics Agency (DLA) or General Services Administration (GSA) will be included in TBs by the appropriate Army supply class manager.

t. Problems involving equipment publications for new and modified materiel that cannot be resolved prior to finalization will be solved through a maintenance literature conference. This is done before the development acceptance in-process review or ASARC and Defense Systems Acquisition Review Council by the agency or command responsible for logistics support of the materiel system.

u. TMs are evolving to electronic formats known as ETMs and IETMs. These media will replace paper, increase efficiency, reduce operations and sustainment costs, leverage embedded diagnostics and prognostics capabilities on major weapon system platforms and equipment, and reduce paper requirements.

(1) ETMs and IETMs are intended for all units, including depots. The ETM/IETM should be capable of accessing the weapon system and/or associated equipment when equipment is on hand to support an individual user's requirements.

(2) The Army will provide a maintenance support device for using ETMs and IETMs. These devices will have multiple capabilities but will include the ability to play an ETM or IETM, interface with a weapon system platform or equipment item, run a portion of TAMMS (GCSS-A) at the mechanic/technician level, and have the ability to leverage AIT. TRADOC will use the requirement determination process to document and acquire this equipment.

(3) Paper TMs are intended for all operator manuals, wiring diagrams or schematics, firing tables, safety of use/flight technical bulletins, and pre-combat/flight checklists. These items will be reevaluated periodically to assess improvements and feasibility of emerging technology.

(4) Commanders may elect to maintain limited paper copies for contingency plan purposes.

(5) Paper copies will be stocked and distributed on a demand-only basis by the Army Publishing Directorate (APD).

v. Depot maintenance work requirement:

(1) Depot maintenance work requirements will be available for the performance of depot maintenance tasks identified in the MAC. All overhaul, rebuild, and remanufacturing of equipment regardless of commodity will be defined as depot-level maintenance to the extent that this does not include TM 10- and 20-series maintenance requirements. Maximum use will be made of existing data and procedures. Instead of depot maintenance work requirements, consider using verified manufacturers equipment publications for procured or leased commercial materiel. Depot maintenance work requirements, when required, must contain data required by DA Pam 25-30.

(2) Depot maintenance work requirements will be verified by the system proponent as indicated in section II of the SS (DA Pam 700-55).

(3) Depot maintenance work requirements will be maintained by the system proponent to agree with the latest technical data package.

(4) Materiel proponents (for example, USAMC and TSG), in coordination with APD, will publish and maintain a current index of all depot maintenance work requirements.

w. National Maintenance Work Requirement:

(1) NMWR will be available for the performance of sustainment maintenance as directed by the NMM. All class IX repairs directed by the NMM, regardless of commodity, will be defined as sustainment maintenance. Development of NMWRs maximize the use of existing data and procedures. Consideration will be given for using verified manufacturers equipment publications for procured or leased commercial equipment. NMWRs must contain data required by DA Pam 25-30.

(2) NMWRs will be verified by the system-applicable Army materiel command (AMC) MSC.

(3) NMWRs will be maintained by the applicable AMC MSC to agree with the latest technical data package.

x. It is the responsibility of the MATDEV to fund the verification effort for all equipment publications, including funding for user representative involvement.

## **6-12. Initial provisioning**

Initial provisioning is a management process for determining and acquiring the range and quality of support items necessary to operate and maintain a new end item of materiel for an initial period of service. Detailed information is contained in AR 700-18, AR 700-82, and MIL-PRF-49506.

a. The selection and assignment of spares and repair parts to the levels of maintenance will be accomplished per guidance in AR 700-18 and AR 700-82 using data developed through the logistics support analysis process.

b. Selection and coding assignment must be according to the maintenance concept, the maintenance plan, and the MAC.

c. Source, maintenance, recoverability (SMR) codes; essentiality codes; and demilitarization codes will be assigned to each spare and repair part, TMDE, and other support items.

d. Maintenance replacement rates (MRR) and task times will be assigned for peace, wartime and MOOTW usage, and geographical considerations for all spares and repair parts. Technical guidance for developing MRR can be found in MIL-PRF-49506.

e. Maintenance task distribution will be developed by using the MAC, maintenance level workload capability, and latest repair turnaround times. (See AR 700–18.)

### **6–13. Logistics demonstration**

a. Maintenance support tests, demonstrations, and evaluations will be conducted for materiel during acquisition, including materiel undergoing major modifications. They will constitute the major portion of the overall equipment testing for logistical supportability. The purpose of logistics demonstration testing is to assure that the materiel, with the support that will be available in the field, can be properly and safely maintained in its intended operational environment according to the approved maintenance/logistical support concept. Tests and evaluation will also serve to verify adequacy of the maintenance portion of the SSP, manpower requirements data, and compatibility with designated TMDE.

b. Responsibilities for initiating, planning, programming, conducting, and reporting DT and OT are covered in AR 73–1. Maintenance test, evaluation, and demonstration requirements are implemented through the ILS process in AR 700–127.

### **6–14. Materiel release and fielding**

a. The objective of the materiel release for issue process is to establish a management control system to ensure that materiel released for issue by the Army is safe, operates as designed, and is logistically supportable during fielding. Materiel fielding is the process of planning, coordinating, and executing the deployment of a materiel system and its support. AR 700–142 covers the policy for these programs. DA Pam 700–142 contains instructions, formats, reporting requirements, and schedules used to carry out the policies.

b. Maintenance activities within materiel proponents will comply with policy and procedures in the publications referenced above to ensure that—

(1) Materiel is available for test and evaluation by U.S. Army Test and Evaluation Command to ensure that all established requirements and specifications are met.

(2) New equipment training (NET) has been accomplished per AR 350–35.

(3) Organic Army support has been established or contractor support is available.

(4) Verified DA equipment publications or authenticated and verified COTS manuals are available.

(5) Necessary support equipment, special tools, and TMD to support the new item are available.

### **6–15. Planning, programming, and budgeting for STS and SSTS**

a. During the development and production phases of the weapon system life cycle, STS will be planned, programmed, and budgeted for by the program manager of the weapon system. STS will be funded with procurement dollars.

b. Commencing with the first full fiscal year after production ends, STS will transition, with funding, to SSTS and will be planned, programmed, and budgeted for by the supporting USAMC MSC. SSTS will be funded with OMA dollars. STS funding will transition from procurement to OMA concurrent with the transition of programming responsibility from the PM/program executive officer (PEO) to USAMC.

c. For those weapon systems currently managed by PEO/PMs that are forecasted to go out of production during the POM years, the PEO/PMs will develop weapon system schedules in coordination with the gaining USAMC MSC.

d. SSTS requirements will be developed by weapon system and function (logistics assistance representatives) and/or type of program (such as SDC). The USAMC MSC will validate and certify all SSTS requirements and cost estimates, whether contractual or organic, prior to submitting the annual HQDA on-site reviews. Supporting documentation used in support of the MSC SSTS requirements validation will be retained for HQDA review. USAMC will compile the MSC data for submission to HQDA in support of the POM each year.

e. The latest ODCS, G–3 prioritization guidance for sustainment of fielded equipment will be used, and a priority will be assigned based on the criteria established in the guidance. Funds will be applied in priority order. HQ USAMC will provide justification for any deviation. A copy of the latest prioritization guidance may be obtained from ODCS, G–3, ATTN: DALO–SMM, 500 Army Pentagon, Washington, DC 20310–0500.

## **Chapter 7 Maintenance Programs**

### **7–1. Maintenance award program**

a. *Chief of Staff, Army Award for Maintenance Excellence program.*

(1) *Purpose.* The Chief of Staff, AAME program is conducted each year to recognize Army units/activities that have demonstrated excellence in maintenance operations.

(2) *Objective.* The objectives of the AAME program are to improve and sustain unit maintenance readiness, assess

the status of total unit maintenance readiness, improve efficiency and reduce waste, recognize outstanding maintenance accomplishments and initiatives, ensure the best units compete, and promote competition at MACOM, HQDA, and DOD levels.

(3) *Responsibilities.*

(a) Each year the Chief of Staff, U.S. Army (CSA), or his or her designated representative, will present the AAME plaques to the 12 winners and 12 runners-up for their superior maintenance operations.

(b) The ODCS, G-4 will—

1. Provide program funding guidance, policy, and overall supervision of the program.
2. Determine the most-appropriate means of award presentation and coordinate the annual award ceremony.
3. Conduct the Army board that selects six nominees to the Secretary of Defense Maintenance Awards Program.

(c) The Commander, U.S. Army Ordnance Center and School (USAOC&S) will—

1. Serve as executive agent for administration of the AAME program.
2. Assist ODCS, G-4 in the development and coordination of updates and modifications to policy and administrative instructions.
3. Develop, revise, and maintain security of assessment protocols used to select semifinalists, runners-up, and winners.
4. Convene the HQDA assessment board and conduct on-site evaluation team visits.
5. Assist DCS, G-4 in determining the most appropriate means of award presentation and coordinating the annual award ceremony.

6. Host an annual after-action review (AAR) with MACOM representatives.

(d) MACOM commanders will—

1. Promote competition at all levels of command and develop awards to recognize units/activities participating in all levels of the competition process.
2. Validate, select, and endorse nomination packets submitted by subordinate organizations in accordance with appendix D and forward to USAOC&S.

(e) Commanders, TRADOC, CNGB, and the Office of the Chief of Army Reserve (OCAR) will provide board members and on-site evaluation team members to support the assessment process as required by the USAOC&S.

(f) Unit commanders (or equivalent) will conduct their programs within the guidelines established in this paragraph and in appendix D.

(4) *Categories of competition.*

(a) Categories of competition are based on unit-authorized personnel. The categories are—

1. Small: 10 to 100 authorized personnel.
2. Medium: 101 to 300 authorized personnel.
3. Large: 301 or more authorized personnel.

(b) The four component competition areas are—

1. Active Army TOE/MTOE unit.
2. ARNG TOE/MTOE unit.
3. USAR TOE/MTOE unit.
4. TDA unit (any component).

(c) Within each of the four component competitions, units will compete in their respective categories, based on the number of authorized personnel identified in (a), above.

(5) *Command nomination process.*

(a) Nominations will be accepted from the following MACOMs:

1. Eighth U.S. Army.
2. U.S. Army, Europe, and Seventh Army.
3. U.S. Army Forces Command.
4. U.S. Army Pacific.
5. U.S. Army South.
6. NGB—an Army Command.
7. U.S. Army Intelligence and Security Command.
8. U.S. Army Medical Command.
9. U.S. Army Materiel Command.
10. U.S. Army Military District of Washington.
11. U.S. Army Military Traffic Management Command.
12. U.S. Army Special Operations Command.
13. U.S. Army Training and Doctrine Command.
14. U.S. Army Criminal Investigations Command.

15. U.S. Army Corps of Engineers.
16. U.S. Army Reserve Command—an Army Command.
17. U.S. Army Space and Missile Command.
18. U.S. Army Networks Enterprise Technology Command/9th Army Signal Command.

(b) The number of nominations that may be submitted by a MACOM are limited, as follows:

1. Each Active Army MACOM may submit six nominations for the Active Army TOE/MTOE competition: two small-, two medium-, and two large-unit nominations, except FORSCOM, which may elect to submit three per category.

2. FORSCOM may submit 18 nominations for the USAR TOE/ MTOE competition: six small-, six medium-, and six large-unit nominations. All other MACOMS with USAR units may submit six nominations for the USAR TOE/ MTOE competition: two small-, two medium-, and two large-unit nominations.

3. The NGB may submit 18 nominations for the ARNG TOE/ MTOE competition: six small-, six medium-, and six large-unit nominations.

4. Each MACOM may submit six nominations for the TDA competition: two small-, two medium-, and two large-unit/activity nominations.

(c) The program is designed to assess the unit's maintenance operations at division, brigade, battalion, company, battery, troop, and equivalent MTOE/TDA organizations. However, parent units (for example, brigade, battalion) that compete must address all subordinate elements in their nomination packages.

(d) With the approval of the responsible MACOM commander, detachments that meet all other requirements of this regulation and are assigned unit maintenance functions may compete. Detachments, teams, or other elements that are temporarily separated from the parent organization will compete as part of their parent unit and not as a separate entity.

(e) Units that have effective date changes to their MTOE or TDA during the competitive fiscal year will be assessed on the MTOE/TDA under which they were organized for the greatest part of the year. Commanders should note MTOE/TOE changes in their comments. Units with an augmentation TDA to their base TOE will compete as TOE units.

(6) *Submission of nomination packages.*

(a) Instructions for preparing and submitting the AAME nomination package are listed in appendix D.

(b) Units will submit packets through command channels to their appropriate MACOM.

(c) MACOMs will review and select those packets to be nominated to the HQDA-level AAME competition in accordance with instructions and criteria in appendix D. If selected to represent the MACOM, MACOMs will then endorse and forward the original packets for each unit/activity nominated to arrive at the USAOC&S not later than 15 December following the fiscal year of competition.

(d) Submission of nomination packages to the USAOC&S constitutes consent for an on-site evaluation of the unit's maintenance program as articulated in the nomination packet.

(7) *HQDA evaluation process.*

(a) *Phase I: submission of AAME nomination packets.*

1. USAOC&S will convene an evaluation board and appoint an appropriate chairperson.

2. The board members will be drawn from TRADOC service schools, OCAR, NGB, and other special activities. Members will have both a proven performance record and expertise in maintenance. Personnel will be in the grades of master sergeant through sergeant major, chief warrant officer two through chief warrant officer five, and captain through lieutenant colonel or civilian equivalent.

3. Phase I evaluation guidelines and scoring criteria will be developed by USAOC&S. The board will assess the AAME nomination packages and select 6 semifinalists in each of the 12 competition categories.

(b) *Phase II: on-site evaluation of selected Phase I semifinalists.*

1. USAOC&S will appoint four on-site evaluation teams: Active TOE/MTOE, ARNG TOE/MTOE, USAR TOE/ MTOE and TDA.

2. The team members will be selected from TRADOC schools, OCAR, NGB, and other special activities. If possible, members will be selected from the phase I evaluation board or have previous experience in conducting AAME on-site evaluations.

3. Using the phase II evaluation guidelines/scoring criteria, the on-site teams will evaluate each semifinalist unit.

(c) *The phase I and II results.* Results will be combined to determine the winner and runner-up in each of the 12 competition categories. The final score is a weighted score of both phase I (30 percent of the final score) and phase II (70 percent of the final score) results.

(d) *Winner notification.* The DCS, G-4 (DALO-SMM) will notify the winners/runners up by message immediately after phase II results are compiled.

(e) *Lessons learned.* The USAOC&S will compile and forward lessons learned from the nominations not selected as semifinalists to each MACOM. Additionally, the USAOC&S will host an annual MACOM-level AAR. Lessons learned will be discussed at the annual maintenance award program AAR.

(8) *Publicity.*

(a) To enhance recognition of AAME winners and promote participation in the process, all levels of command should aggressively publicize the program. This may be accomplished through public affairs officers and may include announcements of winners in local newspapers, hometown news releases, and background information about the Army-wide aspects of the AAME program and its positive impact on unit combat readiness.

(b) The USAOC&S will ensure that its public affairs office is continually apprised of AAME events and achievements.

(c) Commanders will submit publicity information and photographs for historical purposes to the Commander, U.S. Army Ordnance Center and School, ATTN: ATSL-AAME, Aberdeen Proving Ground, MD 21005-5201.

(d) Photographs taken at the AAME award ceremony will be sent to the MACOM for distribution to all awardees.

(9) *Program milestones.* The USAOC&S will—

(a) Request HQDA board members and on-site evaluation team members during the first quarter of the fiscal year.

(b) Conduct HQDA Phase I Evaluation Board during the second quarter.

(c) Conduct HQDA on-site Phase II Evaluation Team visit during the second quarter, following the conclusion of the Phase I Evaluation Board.

(d) Publish *PS Magazine* and public affairs articles, as required.

(e) Conduct MACOM-level AARs during the third quarter.

*b. Secretary of Defense (SECDEF) Maintenance Award Program.*

(1) The SECDEF Maintenance Award Program annually recognizes the top six maintenance units across all services. The AAME program is used as the gateway to compete for the SECDEF Maintenance Award.

(2) Army nominees are selected from among units that competed in and were selected as AAME winners. The top AAME winners will be the Army's nominees for the SECDEF Maintenance Award. An Army unit must compete and be selected as a winner in the AAME program to be nominated for the SECDEF Maintenance Award Program.

(3) The selection board will nominate two AAME winners in each of the three categories as follows:

(a) Small: 10 to 100 authorized personnel.

(b) Medium: 101 to 300 authorized personnel.

(c) Large: 301 or more authorized personnel.

(4) The SECDEF Maintenance Awards are presented to the two top units in each of the three categories. The Secretary of Defense Phoenix Trophy is awarded to the best of the six winners.

## **7-2. Army Oil Analysis Program**

The objectives of the AOAP are to improve operational readiness of Army equipment, promote safety, detect impending component failures, and reduce resource usage by conserving petroleum products by applying on condition oil change (OCOC) policy. In the AOAP, the term "oil" covers all fluids used in wetted lubrication systems (such as hydraulic fluid, grease, transmission fluid, and oil).

*a.* OCOC eliminates the wasteful requirement of changing component oil based on hours/miles/calendar days as currently specified by many TMs and LOs. Oil will not be changed unless recommended by the AOAP laboratory. When recommended, both the oil and the oil filter(s) will be changed at the same time.

*Note.* Oil filter(s) will be serviced/cleaned/changed when they are known to be contaminated or clogged, when service is recommended by AOAP laboratory analysis, or at prescribed hard time intervals as described in LO or TM.

(1) When a unit is deployed and oil analysis service is not readily available, the unit maintenance officer may authorize an oil and filter change when oil contamination is evident.

(2) The OCOC policy does not change or modify procedures and guidance for—

(a) New equipment under manufacturer's warranty.

(b) Seasonal oil change requirements in current TMs and LOs.

*b.* The CG, USAMC is the responsible agent for the AOAP. Approval of all policy pertaining to the AOAP rests with ODCS, G-4. In addition, the CG, USAMC will—

(1) Exercise program management over the AOAP.

(2) Fund and procure laboratory equipment.

(3) Ensure that USAMC major subordinate commands—

(a) Recommend systems for inclusion in the AOAP and sampling intervals for these systems.

(b) Configure systems to use oil sampling valves where feasible.

(4) Provide a DA program director, AOAP, who will—

(a) Provide management guidance, technical supervision, and assistance to all Army activities regarding the AOAP.

(b) Conduct annual unannounced laboratory assistance and assessment review visits to monitor laboratory operations.

(c) Serve as the functional manager for the AOAP Standard Data System, as prescribed in AR 70-1 and DA Pam 25-6.

- (d) Serve as the executive agent of the Depot Oil Analysis Program.
  - (e) Ensure compliance with the Joint Oil Analysis Program (JOAP) as specified in AR 700–132.
  - (f) Approve weapon systems and end items recommended for inclusion in the AOAP.
  - (g) Approve sampling intervals.
  - (h) Develop and maintain component wear-metal evaluation criteria for systems in the AOAP and ensure that criteria are published in the proper laboratory TMs.
  - (i) Plan and coordinate research and development to improve oil analysis techniques.
  - (j) Prepare and update the AOAP Five-Year Program Plan and coordinate resources prior to redistribution of workload.
  - (k) Develop and maintain a prototype performance work statement for use in solicitation documents for the contract operation of AOAP laboratories. The program director will also assist in the review of contractor bids and proposals and evaluate the qualifications of contractor personnel to satisfy the terms of the contract.
  - (l) Ensure that all AOAP laboratories meet and maintain requirements for certification prescribed in the AOAP laboratory manual.
  - (m) Serve as technical adviser for the assembly and operation of mobile oil analysis laboratory facilities.
- (5) USAMC has designated USAMC Logistics Support Agency to appoint a program director of the AOAP to provide management guidance, technical supervision, and assistance to all Army activities regarding the AOAP. The program director, in coordination with the JOAP–Technical Support Center, will ensure that the procedures prescribed in the JOAP laboratory manual regarding certification of equipment and personnel are compatible with established requirements for AOAP laboratories.
- c. MACOM commanders will—
- (1) Ensure that all subordinate commands participate in the AOAP.
  - (2) Establish oil analysis laboratories in coordination with the AOAP director.
  - (3) Fund the operation of laboratories.
  - (4) Ensure standard statement of work is used in solicitation documents for the contractor operation of AOAP laboratories.
  - (5) Ensure that each battalion or equivalent organization owning or operating equipment or components per DA Pam 738–750 and DA Pam 738–751 appoints an AOAP monitor, who will ensure subordinate units—
- (a) Implement AOAP.
  - (b) Appoint an AOAP monitor who has been properly trained and certified by the supporting laboratory to administer and control the program in the unit.
  - (c) Enroll all AOAP-designated equipment and components in the program.
  - (d) Properly and accurately take oil samples and submit them at the prescribed intervals.
  - (e) Comply with laboratory recommendations and notify the laboratory by DA Form 3254–R (Oil Analysis Recommendation and Feedback) within 5 days of maintenance accomplishment.
  - (f) Publish procedures in the unit-level maintenance SOP to ensure the program is implemented and followed.
  - (g) Have adequate maintenance personnel who are properly instructed in the techniques of drawing oil samples from equipment components and in preparing DA Form 2062 (Hand Receipt/Annex Number) and DA Form 5991–E (Oil Analysis Request).
- d. The CG, TRADOC is responsible for developing and incorporating AOAP instructions into all appropriate service schools’ programs of instruction.
- e. The following policies apply to the AOAP:
- (1) The AOAP is mandatory at all levels of maintenance operations for specified materiel, including overhaul for QA purposes.
  - (2) All Army aircraft and those systems identified in DA Pam 738–750 will be enrolled in the AOAP. The AOAP Director must approve all additions or deletions in writing.
  - (3) The AOAP will be executed between the laboratory and the user unit.
  - (4) The servicing AOAP laboratories will evaluate the lubricating and hydraulic oils from all components enrolled in the program. Intervals are specified in DA Pam 738–750, TB 43–0106, or upon notification by the servicing AOAP laboratory.
  - (5) Upon receipt of a DA Form 3254–R issued by the AOAP laboratory, the unit commander will place the equipment in an NMC maintenance status on DA Form 2406 until the maintenance action is completed. To ensure safety of flight, an aircraft may be placed in an NMC status before formal receipt of a DA Form 3254–R.
  - (6) All units and levels of command will have an AOAP monitor who is adequately trained by the supporting lab or installation AOAP monitor.
  - (7) Each AOAP laboratory will provide oil analysis support per applicable publications and supplemental guidance provided by the program director.

(8) Oil sample valves will be installed on all vehicles and equipment enrolled in AOAP as specified by the materiel proponent. GS and depot activities will install sample valves during overhaul and repair of assemblies as needed.

(9) During wartime, AOAP priority will be given to aeronautical items.

(10) During the transition to war, AOAP support will be provided by fixed labs and mobile or portable systems as they are available.

(11) During wartime, AOAP service will be—

(a) Provided as far forward as possible using the most-responsive system available.

(b) Event oriented, occurring during unit stand-downs, reconstitutions, and the conduct of DS- and GS-level maintenance.

(12) Direct communication between the AOAP program director and the various command operating elements and laboratories is authorized. Correspondence will be sent to the Commander, USAMC Logistics Support Activity, ATTN: AMXLS-OA, Redstone Arsenal, AL 35898-7466.

f. Establishment and refinement of normal and abnormal wear metal concentration patterns is completely dependent upon correlation of analytical data with actual conditions found at disassembly inspections. Feedback to the laboratory is essential to refine evaluation criteria, to increase the accuracy of laboratory predictions, and to recommend design changes in those major assemblies showing an abnormal failure rate through the AOAP. Therefore, operating and maintenance activities must furnish maintenance and disassembly inspection data to the AOAP laboratories regarding engines or other major assemblies. The procedures for furnishing feedback are contained in DA Pam 738-750 and TB 43-0106.

g. Detailed operating procedures for the AOAP are contained in DA Pam 738-750 and TB 43-0106.

h. Inter-Service support is provided according to AR 700-132.

### **7-3. Army warranty program**

a. Materiel under warranty will be identified and maintained per the detailed policies and guidance contained in AR 700-139.

b. Warranty actions will be completed as directed in AR 700-139 and reported under DA Pam 738-750 and DA Pam 738-751.

c. Unit readiness and mission effectiveness will take priority over warranty actions. The supporting warranty coordinator (WARCO) will be notified immediately when equipment must be fixed first and the warranty settled later.

d. Application of the AOAP to items under warranty is specified in the item's warranty technical bulletin. AOAP procedures supplement the instructions directing oil changes for equipment under warranty.

e. Representatives of the LAP will provide advice and assistance to MACOM WARCO and personnel at unit, DS, and GS levels of maintenance.

f. Manufacturer's standard warranties will be accepted when items are locally procured. Special warranties will be included in local purchases only when they are cost-effective and executable by the user.

g. Depot maintenance-related warranty expenditure will be monitored and reported to HQDA (DALO-SMM) as required. This data will be used as input to the Army's Distribution of Depot Maintenance Workload Report (also known as the 50/50 report). All warranty contracts that specifically contain a scope of work indicating depot-level maintenance services will be reported.

h. Warranty actions that require a modification must be applied by a valid MWO. The MWO will be applied and reported per AR 750-10.

### **7-4. Sample data collection**

a. *Objectives and purpose.*

(1) The SDC program is established per DODD 4151.18 to improve weapon system performance and logistics supportability and maintainability as well as to support ARSTAF programs. It is an integrated, closed-loop field data collection and management system authorized by DA. Under the program, maintenance and logistics data are collected through on-site observation of a sample number of designated end items operating in selected units for specified periods of time. Dedicated personnel collect the data in a manner determined by each SDC proponent and approved by the applicable MACOM.

(2) Analysis of SDC information provides an assessment of equipment supportability and performance to support initiatives relating to MANPRINT, safety, design improvements, production processes, MWOs, supply, maintenance, manpower requirements criteria, engineering evaluation, and operating support cost reduction. The SDC program establishes an audit trail to conduct quality assurance per AR 70-1.

b. *Program policies.*

(1) DCS, G-4, in coordination with USAMC, will designate those intensively managed weapon systems that will be mandatory for SDC. DA staff elements, user MACOMs, and materiel proponents may nominate other weapon systems for discretionary SDC. Normally, mandatory and discretionary SDC requirements will be identified during the ASARC/Defense Acquisition Board B after the full-scale development contract is awarded.

(2) SDC requirements are incorporated in the initial draft MFP. Prior to initiation of a project, the materiel proponent will develop a detailed collection plan. Collection plans will be approved by Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500, and coordinated with MACOMs by the USAMC executive agent.

(3) USAMC Army Materiel System Analysis Activity (AMSAA) is the DA/USAMC executive agent for SDC and will—

- (a) Receive guidance and direction from DCS, G-4.
- (b) Assume full USAMC responsibility for administering the program.
- (c) Develop and execute policy guidance.
- (d) Conduct evaluations at the MACOM, proponent, and participating unit levels to assess operations and evaluate compliance with regulatory guidance.

(e) Provide assistance, as required, in all aspects of the SDC program.

(4) The SDC controls apply to all DA activities soliciting materiel system field performance information from the Army user, except data collected under DA Pam 738-751. All requirements for data collection on fielded equipment in the hands of the user will be approved by DCS, G-4 through the DA/USAMC executive agent. The USAMC MSC with equipment proponenty is designated the SDC proponent. The AMSAA is the SDC proponent for all field exercise data collection (FEDC). All SDC projects are managed and executed by the applicable SDC proponent.

(5) Any difference between MACOMs relative to roles and responsibilities involved in individual SDC projects will be resolved by DCS, G-4.

(6) The SDC empirical data is a mandatory source of information for materiel proponents to use when providing information required by functional and staff elements.

*c. Types and methods of SDC.*

(1) There are three types of SDC, as follows:

(a) *Conventional SDC.* These encompass specific equipment end items and are comprised of mandatory and discretionary projects. Mandatory SDC projects are directed by DCS, G-4 and are funded using applicable phased/preventive maintenance funding. The equipment MSC proponent selects discretionary projects. When properly justified, any activity requiring data may request that the SDC proponent establish a discretionary SDC project. Discretionary projects are normally funded by the activity identifying the need for information. All conventional projects have a duration of 3 years unless extended or terminated by DA.

(b) *Special field information tasks (SFITs).* These are short term in nature (1 year or less) and are designed to support PEO, PM, and MSC requirements that do not dictate a full-scale SDC project. The SFITs also may be used to augment selected ARSTAF objectives but cannot duplicate other ongoing efforts. An activity having a need for materiel system field performance data may request an SFIT through the SDC program. The SFITs are normally funded by the requesting activity (PM or equipment proponent).

(c) *Field exercise data collection.* FEDCs encompass collection of maintenance and operational data on mission essential end items—normally equipment readiness code P and A, as defined in AR 220-1—during selected major field training exercises (FTXs). The DA-approved FEDC projects have a duration of 3 years, unless extended or terminated by DA.

(2) The four methods or levels of data collection are listed below. They are authorized commensurate with information required, objectives to be achieved, and cost considerations. The data collection method to be selected is outlined in the field procedures guide and is the that is one most cost-effective but least disruptive of field operation while still accomplishing the objectives of the SDC effort.

(a) *Level 1.* Owning and support personnel will allow SDC data collectors to review/copy standard DA forms. Additional data elements, as required, will be provided by owning unit and support personnel but are restricted to an absolute minimum and requires strong justification. The SDC proponent representatives will collect data, perform quality checks, transcribe data as required, reduce data if required, and forward data to a designated site.

(b) *Level 2.* Owning unit and support personnel will allow SDC data collectors to review/copy standard DA forms. SDC proponent agency representatives, however, will collect additional data elements, verbally and through direct observation of owning and support units. The SDC proponent representatives will collect standard DA forms, perform quality checks, transcribe data as required, reduce data if required, and forward forms/reduced data to a designated site. No additional reporting burden will be placed on participating field units.

(c) *Level 3.* This data collection method is highly detailed in nature and is associated with data collection during intensive usage scenarios in which SDC proponent representatives will collect highly complex reliability, availability, and maintainability data, including data reported through various standard Army systems. No additional reporting burden will be placed on field units. Examples of this method include follow-on evaluations, lead the fleet, and fleet leader programs. This method will be used only when properly justified to accomplish complex requirements.

(d) *FEDC.* FEDC also encompasses collection of maintenance and operational data on ERC P and A items during contingency operations such as MOOTW, stabilizing operations, and peacekeeping operations. Contingency operation FEDC programs can occur after the first year of deployment with approval of the contingency operation task



commander. Level 2 is the authorized data collection method during contingency operations to minimize the administrative burden on soldiers and disruption of unit operations.

### **7-5. Army Modification Program**

*a.* Modifications to Army materiel are either mandatory MWOs that are emergency, urgent, or routine or are alternate changes that include minor alterations and special purpose or special-mission modifications.

*b.* Mandatory modifications are authorized for application by a published MWO. The proponent for the MWO is responsible for applying the MWO.

*c.* Equipment awaiting application of an emergency MWO will be placed in an NMC status according to DA Pam 738-750, DA Pam 738-751, AR 220-1, and AR 700-138.

*d.* Urgent modifications will be applied within 2 years from the MWO effective date as specified in the MWO. If the modification is not applied within the specified time, the equipment will be placed in an NMC status according to DA Pam 738-750, DA Pam 738-751, AR 220-1, and AR 700-138, except in the case where an extension has been granted by DALO-SMM per AR 750-10.

*e.* Routine modifications will be applied within 4 years from the MWO effective date as specified in the MWO. If the modification is not applied within the specified time, the equipment will be placed in an NMC status according to DA Pam 738-750, DA Pam 738-751, AR 220-1, and AR 700-138.

*f.* Commanders will not allow their equipment to be modified unless there is an official MWO. The activity applying an MWO will report MWO application in accordance with AR 750-10.

### **7-6. Army Maintenance Float Program**

*a.* The only authorized maintenance float in the Army is the ORF.

*b.* ORF is an authorized quantity of assets for use by MTOE and TDA maintenance activities with a DS/AVIM-level maintenance mission to exchange with supported units when repairs cannot be accomplished within MACOM established guidelines. ORF assets awaiting issue will be maintained at the Army maintenance standard defined in paragraph 3-2.

(1) During peacetime, ORF is designed to assist in maintaining the readiness and operational posture of units.

(2) During transition to war—

*(a)* Units deploying before the outbreak of war will deploy with unit allocated ORF equipment. The unit allocation will be by line item number (LIN) and will be the ratio of each unit's equipment to the total of equipment supported by the installation from which the unit is deploying.

*(b)* Upon the outbreak of war, nondeployed MACOMs will use ORF to enhance equipment readiness and fill shortages. Any excess ORF will be reported to ODCS, G-3 for redistribution guidance. Deployed MACOMs will do the same, except they will use any excess ORF to fill initial battle losses.

*(c)* Units deploying to support peacekeeping, humanitarian aid, or disaster relief efforts have the option to deploy their authorized ORF assets with the permission of their MACOM ORF point of contact.

*c.* To be eligible for consideration as a DA maintenance float, an item must—

(1) Have a standard study number (SSN).

(2) Be class VII or class II.

(3) Be authorized maintenance support at the DS/AVIM level, except for the following:

*(a)* ORF may be maintained at TRADOC schools and training centers when approved by CG, TRADOC.

*(b)* ORF may be maintained at TDA and FORSCOM ASC off-site maintenance activities if not collocated with an MTOE DS maintenance unit. The MACOM commander's approval is required.

*(c)* ORF authorized at a light infantry division will be separately identified and accounted for on the division-level Standard Property Book System Redesign and may be stocked regardless of capability to perform DS maintenance on the item.

*d.* Those items with established eligibility will be categorized as—

(1) *Category I.* Items on the DA critical items list and items directed by ODCS, G-3 to have an ORF. These items will be reviewed at the discretion of HQDA.

(2) *Category II.* Items that are readiness reportable per AR 700-138 but are not category I.

(3) *Category III.* Items that are not readiness-reportable but are embedded in and directly affect the readiness of category I and II items.

(4) *Category IV.* Low-density or obsolete items.

*e.* ORF assets will only be issued when the priority designator (PD) on the work order is 01 through 06 and the estimated repair time exceeds the MACOM established time criteria.

(1) In CONUS, the decision to issue an ORF asset will normally be made by the IMMO or the Materiel Management Center commander. In OCONUS, the decision to issue an ORF asset is normally made by the maintenance facility shop officer maintaining the ORF. The decision will be made as rapidly as possible to ensure maximum mission capability.

- (2) Supported units will accept the ORF item to be issued as long as it is a like item or an authorized substitute per SB 710-1-1 and it meets the Army maintenance standard in paragraph 3-2.
- (3) The exchange of an unserviceable reparable end item for an ORF asset will be accomplished as a simultaneous turn-in and issue transaction. BII and COEI common to the end items will not be exchanged.
- (4) The priority for work requests to repair an unserviceable ORF asset and requisitions to replenish washed-out assets will be the highest priority authorized for use by supported customer units.
- (5) Each time a decision is made to float (whether assets are available or not), a demand for ORF will be recorded in SAMS with the appropriate code. A cumulative total of demands and issues will be maintained to support the annual utilization report. Repeated low demand data will be cause for removal from ORF authorization unless retention can be justified by the requesting MACOM.
- (6) DS/AVIM units with ORF will submit a separate monthly readiness report using utilization code 4 per AR 700-138, paragraph 2-3.
- f.* ORF assets will not be used to—
- (1) Provide a source of repair parts (controlled exchange or cannibalization).
  - (2) Expand currently assigned missions or set up new operational missions.
  - (3) Replace items that have been cannibalized during peacetime.
  - (4) Satisfy temporary loan requirements.
  - (5) Set up a peacetime pool of equipment to be held as assets to reconstitute the force.
  - (6) Fill unit equipment shortages.
  - (7) Replace uneconomically reparable equipment.
- g.* Specific ORF responsibilities are as follows:
- (1) The DCS, G-4 (DALO-SMM) will—
    - (a) Approve requests for additions or deletions to the maintenance float support list and all new or revised float factors and notify USAMC of any changes.
    - (b) Coordinate with ODCS, G-3 on approval of new ORF candidates and redistribution of unauthorized or excess ORF equipment.
    - (c) Approve and publish the ORF support list annually.
    - (d) Furnish USAMC-approved float factors for publication in the Total Army Equipment Distribution Plan (TAEDP) cycle.
      - (2) The ODCS, G-3 will—
        - (a) Include the maintenance float in the computations for the Army Acquisition Objective using the approved factors from the TAEDP.
        - (b) Coordinate with ODCS, G-4 to redistribute ORF identified as excess or not authorized.
      - (3) Materiel developers (ASA(ALT), PMs/PEOs, and USAMC) will—
        - (a) Ensure that maintenance float requirements established for equipment being fielded are based on usage data for similar items or best available engineering data.
        - (b) Coordinate with ODCS, G-3; TRADOC; and MACOM ORF coordinators to ensure that maintenance float is properly documented and authorized at MACOM level in conjunction with materiel fielding plan development.
      - (4) CG, USAMC will—
        - (a) Review recommendations for additions/deletions to maintenance float and develop and submit the proposed ORF support list with float factors to HQDA for approval. (RCS exempt: AR 335-15, para 5-2e(1)).
        - (b) Compute total ORF authorization for DA approval.
        - (c) Validate ORF authorizations in the requisition-validation (REQVAL) system against the TAEDP authorizations. The total of ORF on hand plus on requisition will not exceed the TAEDP authorization.
        - (d) Recompute float factors annually, as required, based on usage data reported by MACOMs or HQDA guidance.
        - (e) Publish approved authorizations in the TAEDP.
        - (f) Publish approved float factors in SB 710-1-1.
    - (5) MACOM commanders and CNGB will—
      - (a) Approve the establishment of ORF and appoint a float coordinator.
      - (b) Distribute ORF within the command.
      - (c) Establish repair time criteria to be used as the basis for issue of ORF assets.
      - (d) Determine the minimum quantity of ORF required to meet their needs and ensure that ORF on hand and on requisition does not exceed the TAEDP authorization.
      - (e) Report the previous calendar year demand data for ORF to the USAMC Logistics Support Activity, ATTN: AMXLS-RB, Redstone Arsenal, AL 35898-7466. (RCS exempt: AR 335-15, para 5-2e(1)). An example of the required data is as follows:
        1. Routing identifier code (RIC).
        2. LIN.

3. NSN.
4. Nomenclature.
5. Total ORF downtime (days).
6. ORF-authorize (TAEDP).
7. Current on-hand ORF assets.

(f) Report any excess or unauthorized ORF assets to HQDA (DALO-SMM) for disposition instruction. Excess includes ORF assets on hand with no utilization during one reporting period. Excess will be distributed as directed by HQDA.

(g) Recommend additions or deletions to the ORF support list throughout the year. These recommendations, with supporting justifications, will be forwarded to LOGSA.

(6) The accountable officer will—

(a) Account for ORF assets per AR 710-2 and DA Pam 710-2-2.

(b) Ensure that all BII/COEI for ORF assets are on hand and serviceable. Accountability and control of BII/COEI will remain with the owning organization. (All equipment not included on the aircraft inventory record and maintained by separate accountability will be removed before exchange.)

(c) Direct the repair of unserviceable ORF items.

h. The following formula will be used to obtain or update the float factors:

(1) For initial computation of the ORF factor during materiel development and fielding:  $(\text{FMC RATE}) \times (\text{MTTR}) / (\text{MTBF} + \text{MTTR}) - \text{FMC RATE}$  obtained from AR 700-138. (-MTBF is in days. -MTTR is in days).

(2) The MTBF and MTTR are those operational requirements specified for that system by the CBTDEV, documented in the ORD, and included in the logistics support analysis requirements (LSAR). When these elements are in rounds, hours, miles, or events, they must be converted to days. During development, MTBF and MTTR data will be obtained from the LSAR.

(3) For updating factors and computing initial factors for fielded equipment the following formula will be used:

(a) Step 1:  $\text{Total ORF downtime density} \times 365 = \text{ORF \%}$ .

(b) Step 2:  $\text{ORF \%} \cdot 9 (\text{readiness goal}) = \text{ORF factor} - \text{total ORF downtime} = \text{amount of ORF downtime avoided because of ORF plus the downtime that could have been avoided because of ORF}$ ; this will be in days. (-Density is TAEDP authorization.)

(4) The formula for RCF factors is:  $\text{mean overhaul cycle time (MOCT)} - \text{mean time between overhaul (MTBO)} = \text{RCF factor} - \text{MOCT minus MTBO}$ . (-MOCT is in months. -MTBO is in months.)

i. The float authorization and factors for an item will be deleted when—

(1) Directed by HQDA.

(2) The computed factor is .0000.

(3) The computed factor is less than .0100 and justification for retention is not received from MACOMs within 1 year.

## **7-7. Battlefield damage assessment and repair**

a. The purpose of BDAR is to rapidly return disabled equipment to combat or to enable the equipment to self-recover. BDAR is the commander's responsibility, based on METTT, and is accomplished by the operator/crew and unit/DS maintenance personnel. Realistic training must be performed during peacetime to ensure wartime proficiency.

b. BDAR procedures are designed for battlefield and training environments and should be used in situations where standard maintenance procedures are not practical or possible. These procedures are not meant to replace standard maintenance procedures, only to sustain the vehicle/equipment until permanent repairs can be accomplished.

c. Low-risk BDAR procedures will be incorporated into peacetime maintenance training both in field and training base scenarios. Combat training centers and field training exercises provide excellent realistic training environments for BDAR. Approved battlefield damage repair (BDR) kits provide maintainers the capability to accomplish damage repair or routine equipment failure repair on the battlefield. BDAR fixes will be replaced with standard repairs at the first opportunity. Equipment may continue to be operated based on the recommendation of qualified maintenance personnel, while waiting parts, with the BDR fix in place. Peacetime BDAR involves low-risk fixes outlined in appendix E of BDAR TMs. Low-risk repairs are those that can be accomplished without risk to personnel or further damage to equipment and can be applied using approved BDR kits under the supervision of qualified maintenance personnel. Peacetime BDAR repairs are temporary and will be replaced with standard maintenance repairs at the first opportunity.

d. BDAR requirements are usually written in TMs. Some items of equipment may not require the development of a BDAR TM; however, if a new or improved system is under development and BDAR is required, the TRADOC BDAR Office will assist USAMC and the contractors in development of a BDAR TM. BDAR is for those items of equipment having a significant impact on the outcome of specific combat missions.

e. BDAR doctrine and techniques will be evaluated during a U.S. Army ballistic research live fire test. Live fire test plans will incorporate BDAR into live fire tests on Army equipment to ensure that BDAR can be performed and to ensure that it is incorporated into appropriate publications. When reporting a BDAR action, a DA Form 2404/DA Form

5988-E will be forwarded to the Survivability/Vulnerability Information Analysis Center (SURVIAC), ATTN: AF-FDL-FES-CDIC, Wright-Patterson AFB, OH 45433.

## **7-8. Army CARC, Camouflage, and Marking Program**

*a. CARC/PPP responsibilities.* The CG, USAMC will provide management and direction for CARC painting, PPP, and marking program of Army materiel as follows:

(1) Provide the lead Army organization for PPP/CARC.

(2) The ARL, AMSRL-WM-MA (coatings technologies team) has been given responsibility for research and development of protective coatings, writing and managing specifications, testing and qualification of products, technical instruction on paints and painting procedures, and shelf life validation and extension.

(3) USAMC MSCs will ensure that CARC requirements are included in all maintenance and new procurement.

*b. Policies for painting.*

(1) CARC is the approved coating for all combat and combat support equipment, tactical vehicles, aircraft, and essential ground support equipment and reparable containers such as engine, transmission, and all ammunition containers, including appropriate kits, except as stated below.

(2) Paint will be applied only when the present paint is unserviceable or the equipment is not painted proper colors for contingency missions. Vehicles may be repainted when 25 percent of the total vehicle painted area has been determined to be unserviceable by supervisory maintenance personnel.

(3) Repainting for the sole purpose of achieving uniformity or for cosmetic purposes is prohibited.

(4) Tactical equipment designed for single-color CARC requirement will be painted with an approved color based upon contingency mission environment.

(5) Complete repainting may be done at DS, GS, and depot levels where Occupational Safety and Health Administration-approved facilities are available.

(6) Painting at unit level using a brush or roller is limited to touch-up painting in accordance with TB 43-0242. Touch-up painting includes restoration of painted surfaces after repair.

(7) Touch-up painting of CARC-painted equipment will be with CARC only.

(8) Scratches, chips, or marring of the paint surface observed during PMCS will be repaired at unit level to prevent corrosion damage. (TB 43-0242 provides guidance.)

(9) Items that do not require painting will not be painted. For example, items made of fabric or that have anodized or parkerized surfaces will not be painted.

(10) Do not paint the following with CARC:

*(a)* Painted items that attain surface temperatures of 400 degrees Fahrenheit and higher, serve a heat-conducting function, or serve a function of expanding and contracting during operation. Examples are manifolds, turbo chargers, cooling fins, and rubber hoses.

*(b)* Displacement watercraft that will be subject to prolonged salt-water immersion, such as the logistical support vessel and the landing craft utility.

*(c)* Nondeployable equipment and fixed installation systems such as railroad rolling stock and fixed power generation systems.

*(d)* Installation/TDA equipment such as military police cars, nontactical fire trucks, and buses.

*(e)* Aluminum transmissions that are enclosed in combat vehicle power pack compartments. However, any ferrous components of the transmission must be protected with CARC or other rust-preventive agent.

(11) Environmentally acceptable paints that do not violate Federal, State, and local laws will be used at all times per technical data packages provided to depots, arsenals, and contractors.

(12) CARC-protected surfaces are not to be covered with petroleum or other products to improve the appearance of the equipment. Use of these products will reduce the chemical protection provided by CARC and increase the probability of injury.

*c. Policies for camouflage pattern painting.*

(1) PPP is a three-color design for use in wooded and other green-vegetated areas and in some arctic or partially snow-covered areas. PPP also includes single colors for use in desert or totally snow-covered areas.

(2) PPP is required for all equipment previously camouflaged in one of the four-color patterns.

(3) PPP is required for all equipment having an area greater than nine square feet on any side.

(4) PPP for new equipment will be specified in the technical data package (TDP) and will be applied at the time of manufacture.

(5) Camouflage colors must meet requirements for spectral and infrared reflectance, in addition to color, as established by the U.S. Army Communications-Electronics Command (CECOM) Research and Development Center (CRDC), Fort Belvoir, Virginia.

(6) PPP, when available, will be applied to equipment during depot rebuild/overhaul, product improvement programs, and recapitalization or refurbishment programs. If the three-color pattern has not been developed, a single color

base coat will be applied. Where possible, depots will apply colors that conform to unit contingency missions if requested.

(7) DS and GS activities will accomplish camouflage pattern painting of equipment having only a base coat. Patterns may be obtained from CRDC, Fort Belvoir, VA. If requirements exist that differ from the approved patterns and color scheme, MACOMs must request development of the required pattern/color scheme.

(8) MACOM commanders are assigned responsibility and authority to camouflage paint equipment with patterns appropriate for contingencies. When a unit has more than one contingency plan, the CPP for the primary contingency will be used. Priority should be given to early deploying units.

(9) CPP will not be changed for training exercises.

(10) CPP will not be applied to—

(a) Equipment not requiring open-area concealment.

(b) Nondeployable equipment and fixed installation systems.

(c) Equipment that must be painted per regulation or policy established by other Services or Government agencies.

(d) Rotary and fixed-wing aircraft. However, ground support equipment must have CPP applied per this regulation.

(e) Components of systems or items that can be transported in various modes and can be constructed or assembled into a variety of configurations.

(f) Stackable containers used in the Defense Transportation System, except missile containers that are a component of a weapon system.

(g) Canvas covers, tarpaulins, end curtains, seats, backrests, and so on.

(11) Equipment will not be decorated with individual characteristic designs such as caricatures or cartoons.

(12) The style, size, and exact location of markings for all Army materiel will be specified in applicable TB 43– and 746–series and other DA technical publications, including technical data packages.

(13) Special markings for NTVs are included in AR 58–1.

(14) Technical data, where appropriate, will be contained on metal or plastic plates or decals.

(15) The Red Cross insignia for Army Medical Department equipment will consist of a red cross composed of four square-shaped arms bordering on a center square of the same size and superimposed on a square white field slightly larger than the cross.

(16) Under tactical conditions, when requirements for concealment outweigh those for recognition, all conspicuous markings may be obscured or removed by the authority and at the discretion of the major organization commander present. Protective Red Cross markings may be obscured only at the direction of the responsible major tactical commander.

(17) Overseas commanders may deviate from this regulation when host countries require special markings per international agreements.

(18) Before Army materiel is sold or permanently transferred from the jurisdiction of DA, all Army identification markings will be removed or permanently obliterated by sanding or chipping.

(19) Aviation equipment will be marked according to MIL–HDBK–1473.

(20) Markings on the exterior of tactical equipment will be applied or over-sprayed with materials resistant to chemical agents.

(21) Safety marking, including hazard warning and caution information, for nontactical equipment, tactical equipment not subject to the Army camouflage policy, and equipment at fixed facilities, will comply with the provisions of AR 58–1. Materiel painted in camouflage requiring hazard warning and caution information will have this information applied in a contrasting color.

## **7–9. Product quality deficiency/improvement reports**

*a.* All Army materiel is subject to QDR and EIR. The purpose of submitting a QDR is to report conditions that are the result of below-standard quality workmanship or materiel deficiencies and to file claims for initial failure credit from the AWCf for DLRs. The purpose of an EIR is to suggest materiel improvements in design, operations, or manufacture. Reporting instructions for QDRs and EIRs are contained in DA Pam 738–750 and DA Pam 738–751.

*b.* EIRs and QDRs submitted on SF 368, product quality deficiency reports, message form, telephone, or other means, are to be evaluated for possible follow-on actions to change the equipment design or equipment operation/maintenance instructions. The surfacing of equipment design deficiencies through the deficiency reporting process (EIRs/QDRs) may result in MC requests being initiated. Deficiency reporting instructions are contained in DA Pam 738–750 and DA Pam 738–751.

*c.* USAMC will—

(1) Establish responsibilities and procedures for managing and evaluating recommended improvements in design, operation, and manufacture.

(2) Establish responsibilities and procedures for managing and evaluating reports of product quality deficiencies in design, specifications, materiel, manufacturing, and workmanship.

(3) Ensure that defects and failures, as reported by user personnel, are promptly analyzed for failure trends and management action and summarized for command use.

(4) Ensure that user experience reported on the deficiency report is considered in the design, engineering, and production phases of new equipment.

(5) Prepare the Army TB 43-0002-series.

*d.* Army activities will assist, when requested, in the investigation, evaluation, and resolution of deficiency reports in a timely manner. The goal is to provide an interim or a final resolution of the report within 180 days after receipt.

*e.* The unit or activity that identifies the need for a QDR or EIR is responsible for its submission.

*f.* When a QDR or EIR results in a need for a modification to fielded equipment, the modification will be applied in accordance with AR 750-10.

*g.* The unit or activity may contact the logistics assistance representative or LAO for guidance on QDR/EIR.

## **7-10. Administrative storage of materiel**

Administrative storage is the placement of organic materiel in a limited care and preservation status for short periods of time. This applies to MTOE and TDA units. The policy for administrative storage installation TDA equipment is in AR 71-32, paragraph 6-71.

*a.* Administrative storage will be considered when—

(1) An activity lacks operating funds, people, and other resources, or when normal usage of its equipment is not adequate to sustain materiel readiness.

(2) Lack of maintenance resources causes an owning organization to be incapable of performing the required unit maintenance of its equipment.

(3) In addition to (1) and (2), above, equipment that exceeds the capability of the owning organization to operate or maintain must be retained by that organization for contingency or other valid reasons.

(4) Completion of current mission does not require use of authorized equipment on a routine basis.

(5) Training requirements of units or individuals do not require the use of all MTOE equipment.

*b.* Before a decision is made to use administrative storage, the commander will consider all workable options for maintaining equipment readiness.

*c.* Installation commanders may authorize the administrative storage of their materiel within guidance furnished by this regulation. To the maximum extent practical, administrative storage of materiel will be controlled and supervised at battalion level or above. Whenever possible, equipment will not be left in administrative storage for a period exceeding 365 days.

*d.* MACOM commanders responsible for administrative storage will—

(1) Furnish assistance to commanders as required in carrying out an administrative storage program.

(2) Monitor the status of materiel in administrative storage in their commands.

(3) Designate an installation representative to conduct a command-level review of administrative storage at 6-month intervals to reassess and revalidate the requirement.

(4) Forward results of these reviews, with appropriate recommendations, to HQDA (DALO-SMM) when the circumstances are beyond the capability of the MACOM commander to resolve.

*e.* When more than 25 percent of an organization's on-hand equipment must be placed in administrative storage, the MACOM commander will consider initiating action to reorganize the activity at a level of equipment authorization that can be operated and maintained.

*f.* Equipment in administrative storage will have all major subsystems exercised as directed by applicable TMs. Any faults detected will be corrected. The materiel will then be completely reprocessed if it is to be returned to administrative storage.

*g.* Before equipment is placed in administrative storage, it must meet the maintenance standard outlined in paragraph 3-2.

*h.* All regularly scheduled preventive maintenance services are suspended while materiel is in administrative storage.

*i.* When like items are in use, they should be rotated with items in administrative storage to keep all items exercised and reduce the maintenance effort. When equipment is not rotated, it should be exercised in accordance with exercise schedule in the TM for the equipment.

*j.* Equipment will be stored to provide maximum protection from the elements; to provide access for inspection, maintenance, and exercising; and to provide physical separation from active equipment.

*k.* Equipment in administrative storage is accounted for per AR 710-2; asset reports are submitted under AR 710-3 and materiel condition status reports under AR 220-1 and AR 700-138.

*l.* Materiel removed from administrative storage will—

(1) Be restored to normal operating condition.

(2) Have all MWOs applied.

(3) Be returned to a normal PMCS schedule using the last type service completed.

(4) Be calibrated as required.

*m.* Commanders will provide the security necessary to prevent cannibalization or theft of materiel in administrative storage in accordance with AR 190–11 and AR 190–13.

*n.* Special scheduled services, inspections, maintenance standards and procedures, or other readiness evaluations prescribed in applicable material operators' manuals will be followed. The applicable unit maintenance TM and TM 1–1500–204–23–1 will be used for aircraft. Performance of the services is the responsibility of the unit storing the materiel. Required services, inspections, and evaluations will be recorded on DA Form 2404 and retained for the duration of the administrative storage or 365 days, whichever is shorter. Faults noted during these actions will be corrected as quickly as practicable.

*o.* Administrative storage of aircraft will be considered in the same category as short-term storage and accomplished per the applicable TM. In no case will aircraft remain continuously in administrative (short-term) storage for more than 45 days. At the end of that time, aircraft will be restored to an FMC status or placed in intermediate storage up to, but not exceeding, 180 days.

## **7–11. The Army Tire Retread Program**

### *a. General policies.*

(1) Command emphasis is required at all levels to obtain maximum safety and savings benefits from the proper use of retread tires.

(2) Surveillance procedures will be established to ensure that all reparable vehicle and aircraft tires are recovered prior to the end of their useful life.

(3) Reparable tires will be retreaded, not discarded, or will be processed through DRMO, unless classified not reparable/not economically reparable.

(4) Except for restrictions listed below, or approved as waivers by HQDA (DALO–SMM), using activities will use retread tires.

(a) Two-ply tires without breaker strips or belts will not be retreaded.

(b) Buses will not be operated with retread tires on the front wheels.

(c) M747 semi-trailers will not be operated with retread tires.

(d) M911 heavy hauler, truck tractor vehicles will not be operated with retread tires on steering axles.

(e) M977–series heavy expanded mobility tactical trucks (HEMTTs) and M860A1–series semi-trailers used with the PATRIOT missile system will not be operated with retread tires.

(f) Any vehicle with a central tire inflation system will not be operated with retread tires on any axle.

(g) Applicable State and Federal transportation codes will be met when a vehicle is operated off the installation.

(h) The OCONUS MACOMs may establish a tire-retreading program per this regulation, but will comply with host-nation tire retread laws and regulations.

(i) Nondirectional cross country retreaded tires will not be used on any axle of any vehicle or trailer, including such vehicles as 5-ton and 2-ton trucks.

(j) Retread tires will not be used on any axle of the M60A1 Patriot Missile trailer or any large missile system and its prime mover. This includes not using retreads on any axles of the M983 HEMTT tractor when it is the prime mover of the Patriot Missile trailer. Retread tires will not be used on any axle of the M985E1 HEMTT Cargo Guided Missile transporter.

(5) Regrooving of tires is not permitted because it is not structurally viable or cost effective.

### *b. Responsibilities specific to the Army's Tire Retread Program.*

(1) USAMC is the executive agent for the Army Tire Retread Program. The U.S. Army TACOM is designated the lead operating agency for developing a national retread program for vehicle tires. This program will include contracts under the BOA for most tactical and tactical support vehicle tires that have been tested and approved.

(2) USAMC is responsible for management of all DA aircraft and vehicle tires.

(3) Participate as a member of the Tri-Service Aircraft Tire Coordination Group to improve aircraft tire management by—

(a) Reviewing tri-Service aircraft tire maintenance data/analysis reports.

(b) Coordinating procurement cost of new and rebuilt tires with the United States Air Force (USAF) and Navy.

(c) Coordinating with the USAF and Navy to revise specifications for retreading tires based on the latest technology.

(d) Coordinating with the USAF and Navy to consolidate and upgrade technical data concerning tire and inner tube publications.

(e) Designating program proponents for developing and managing vehicle and aircraft tire retreading programs.

(4) Program proponents will—

(a) Develop policy and procedures to manage and control tire retreading, including methods of inspection used to determine when tires require retreading or replacement.

(b) Establish reporting procedures needed to determine the cost effectiveness of retreaded tires and report savings under the Army Resources Conservation Program.

- (c) Ensure maintenance programs for the Army and grant aid equipment use retread tires to the maximum extent possible, but only use new tires for foreign military sales (FMS) items.
- (d) Negotiate and sign all tire support agreements.
- (e) Participate jointly with USAF and Navy in qualifying aircraft tire retread contractors who repair tires common to all Services. Qualify separately those contractors who retread Army aircraft tires.
- (5) Repair policy: In developing and managing pneumatic tires, proponents will follow the criteria listed below:
  - (a) Automotive, commercial, tactical, off-the-road type (combat, materiel handling equipment, and construction equipment), and aircraft tires will be retreaded worldwide to the extent that it is economical and practical without endangering personnel/equipment.
  - (b) Provide any technical assistance required for the tire retreading programs, including preaward surveys made per Federal Acquisition Regulation, TB 9-2610-200-34/1, and commercial ASTM standards (listed in the equipment TMs), when approved by TACOM.
  - (6) Major Army commanders, TSG, and the COE will use the U.S. Army TACOM Retread Tire Program to the maximum extent practicable and maximize safety during pneumatic tire use by—
    - (a) Maximizing the use of training courses.
    - (b) Ensuring thorough inspection of pneumatic tires mounted on vehicles and aircraft during PMCS and removal when tread depths reach the dimension for retreading.
    - (c) Ensuring that all maintenance personnel are complying with the requirements of TM 9-2610-200-14.
    - (d) Developing accurate workload requirement forecasts.
    - (e) Reporting excess serviceable (new and retread) and economically repairable tires to the NICP for disposition per AR 725-50, chapter 7.
    - (f) Ensuring that qualified personnel are available to inspect and classify tires prior to shipment for retreading or to DRMO and to perform acceptance inspection on receipt of retread tires from the retreader.
    - (g) Developing aircraft tire usage and performance data upon request from DOD.
    - (7) Quality of retreaded tires:
      - (a) Retreading can be performed several times as long as the casing is removed from the vehicle before damage occurs.
      - (b) Installations and stock record account activities will ensure that all retreaded tires are inspected for quality of workmanship upon receipt. Upon discovery of deficiency in workmanship or quality, inspectors will immediately initiate a QDR/EIR to TACOM or AMCOM.
      - (c) When required, TACOM or AMCOM will provide technical assistance to unit, DS, and GS maintenance personnel.
      - (d) Maximum emphasis will be placed on quality. Tires repaired or retreaded by TACOM contractor or local commercial sources will be guaranteed against defects in materiel or workmanship for the tread life of the tire under contract specifications or ASTM standards. Defective tires will be reported for disposition instructions per DA Pam 738-750 and DA Pam 738-751. Non-retread tires will be returned to the contractor for repair or adjustment. Defective tires rebuilt by Government facilities or from TACOM-qualified commercial sources will be retained as deficiency report exhibits.
      - (e) The current requirements of the Department of Transportation's Federal motor vehicle safety standards for retread or repaired tires apply to the quality of military tires.
  - c. *SOR*. Vehicle tire retread service will be obtained in the following order of priority:
    - (1) *Within CONUS*.
      - (a) TACOM cross-Service contract for tire retreading and repairing from local commercial sources.
      - (b) Local commercial sources by contract let by installation contracting officer when (a), above, is not reasonably available from a cost-effective standpoint due to the distance and transportation costs involved.
      - (c) Government-owned and Government-operated (GOGO).
      - (d) Government-owned, contractor-operated (GOCO) contracts.
    - (2) *Outside CONUS*.
      - (a) U.S. Army TDA units.
      - (b) Army base depot operations of allied governments approved by DA. Government-loaned equipment may be authorized for use at these facilities.
      - (c) GOCO contracts.
      - (d) U.S. or foreign commercial facilities when approved by the local contracting officer.
  - d. *Specifications*. Retreading tires will be accomplished in compliance with the latest approved ASTM standard or military specifications and standards when appropriate. There will be no authorization for deviations from the directives listed below:
    - (1) Vehicle tire retreading will be accomplished only with the latest approved commercial ASTM standards as approved by TACOM.



(2) All vehicle repair/retread materiel for military service requirements will conform to the latest edition of commercial ASTM material standards as approved by TACOM and/or applicable military specifications. GOGO and GOCO facilities will requisition materiel from the appropriate NICP. Military service contracts with commercial concerns will require repair and retread materiel to be in accordance with TACOM-approved ASTM standards and/or military specification, or be obtained from approved sources only.

(3) Aircraft tire retreading will be done per MIL-PRF-7726J, MIL-PRF-5041, and the applicable military standards drawings.

*e. Training.*

(1) All commanders will ensure that training will be provided to all individuals who service single-piece or multi-piece rims and wheels used on large vehicles. These individuals will demonstrate proficiency in their ability to perform specific tire, rim, and wheel tasks. Individual ability to perform these tasks will be evaluated and a record maintained documenting this evaluation. Contact the local TACOM LAR for tire care, maintenance, repair, demounting, and demounting training.

(2) In-depth tire training pertaining to pneumatic tire inspection, classification, repair, care, maintenance, and rebuild standards are conducted through U.S. Army TACOM. This in-depth training is targeted for all CONUS and OCONUS GS/DOL-level tire inspectors and maintenance managers.

(3) The U.S. Army TACOM also provides on-site general tire maintenance training classes for CONUS and OCONUS at the unit location. This on-site training includes the basics needed for pneumatic tire inspection, classification, care, repair, and use of tire inflation safety cage and maintenance of tires. Safety cage training will include a pneumatic tire inflation-gage and 10-foot air hose. This training will be offered by TACOM at the unit's expense.

(4) CONUS and OCONUS tire maintenance training requirements may be coordinated with the Commander, U.S. Army Tank-Automotive and Armaments Command, ATTN: AMSTA-IM-LC-CJT (Tire Group), Warren, MI 48397-5000.

(5) USAMC will be technically prepared to carry out its mission of retreading tires in TDA activities in the event of mobilization. In-house capacity and facilities will be used to the extent necessary to retain up-to-date technical know-how and train personnel for inspection. Training must be justified under criteria prescribed in AR 5-20.

(6) Society of Automotive Engineers (SAE) J2014 is the military wholesale performance specification for qualifying potential tire retreaders for military tactical wheeled vehicles (ground vehicles).

## **7-12. Tool improvement program suggestions (TIPS)**

*a.* The tool improvement program suggestions (TIPS) program is a means for the users of tools to report deficiencies in tools; recommend tools for deletion from, or addition to, SKOT; and suggest modifications to tools that will improve the usefulness of the tools.

*b.* ODCS, G-4 (DALO-SMM) is the proponent for TIPS and will—

(1) Approve Army policy for TIPS.

(2) Resolve conflicts between Army agencies.

(3) Review and approve TIPS documentation developed by U.S. Army Combined Arms Support Command (CASCOM).

*c.* Commander, CASCOM is the executive agent for TIPS and will—

(1) Propose Army policy for TIPS.

(2) Establish procedures for functional and operational control of the TIPS as follows:

*(a)* Receive, analyze, evaluate, coordinate, and staff suggestions and recommendations.

*(b)* Approve or disapprove TIPS initiatives and provide feedback to the suggester and evaluators.

*(c)* Ensure that approved initiatives are implemented.

*(d)* Maintain files and statistics for TIPS.

(3) Publicize the program to ensure Army-wide awareness of TIPS and improvements/changes to SKOT.

*d.* When a suggester (military or civilian) experiences difficulty with a tool that impacts the unit mission, he or she is responsible for notifying the Army's executive agent for tools. This notification may be submitted in any reasonable format and by any means of documentation available, including data fax and/or electrical message. The initiative must be clearly stated; the problem should be explained and a proposed solution provided. See DA Pam 738-750 for specific guidance on TIPS initiatives. Initiatives must be addressed to U.S. Army Combined Arms Support Command, 3901 A Avenue, Suite 220, Fort Lee, VA 23801-1809.

*e.* Evaluators are subject matter/technical experts at TRADOC schools or USAMC/TRADOC MSCs. The evaluator, when tasked, will conduct a complete evaluation of the initiative, including cost/time savings or avoidance, and return comments and recommendations to CASCOM within established time frames.

*f.* If the evaluator determines that a prototype tool is required for testing, he or she will notify CASCOM. CASCOM will provide mailing instructions and a TIPS control number to the suggester. The suggester should provide a prototype

tool only upon request. The suggester or his or her unit, upon the commander's approval, must bear the cost of providing required prototype tools.

### **7-13. National Maintenance Program**

*a. General.* The NMM is responsible for managing all national-level repairables, including selected field-level repairables. This includes, but is not limited to, GS and depot-level maintenance. It establishes overhaul as the single maintenance standard for items repaired and returned to stock. The NMP distributes sustainment maintenance workload across depot and below-depot activities based on national need through a national requirements determination process. Implementation is the responsibility of the CG, USAMC, with guidance and oversight by ODSCS, G-4 (DALO-SMM).

*b. NMP purpose.*

(1) Enhances responsiveness to sustainment maintenance requirements generated during peacetime, contingency, and wartime conditions by linking all levels of sustainment maintenance under the appropriate commodity command.

(2) Implements the Army policy of repair as the primary source of supply.

(3) Implements overhaul as the single standard of repair for those items repaired and returned to the supply system.

(4) Optimizes workload across existing maintenance capabilities and allows for reductions in capital investments to maintenance facilities, TMDE used in maintenance operations.

(5) Develops and maintains a database of maintenance facilities, both organic and contract, and is responsible for ensuring minimal redundancy of maintenance capabilities and capacities.

(6) All repairs will be demand-supported and based on Army requirements. The program will not repair items in long supply.

(7) Consolidate all national sustainment maintenance workload in organic depots, on national maintenance contracts or at below-depot maintenance activities certified by the NMM as qualified national providers (QNP).

*c. Responsibilities.*

(1) The USAMC is the NMM.

(2) The NMM will be the focal point for all USAMC Integrated Materiel Management Center requirements and workload of the Army maintenance system based on national need.

*(a)* The NMM will be responsible for qualification of below-depot maintenance facilities possessing the necessary facilities, tools, TMDE, skills and manpower required to meet the overhaul standard.

*(b)* QNP qualification is required prior to facilities being considered for national sustainment maintenance work-loading.

*(c)* QNP qualification will be based solely on evaluation by the appropriate MSC maintenance engineer of an existing maintenance activity's capability to perform required maintenance to the overhaul standard without additional facilitation.

*(d)* The NMM, in coordination with MACOMs, will determine the activities to be surveyed for QNP qualification based on national need.

*(e)* The NMM will verify that the below-depot maintenance provider possesses a documented quality system as a minimum qualification requirement.

*(f)* The NMM will balance the repair capacity, cost, and production schedules in order to meet total Army requirements, including requirements to support repair parts no longer in production and to support older equipment in the Army inventory.

(3) The USAMC MSC will have management responsibility to consolidate all maintenance requirements and present them to the NMM, certify QNP designation, and develop appropriate maintenance standards necessary to meet the overhaul standard.

(4) The MSC item manager, in coordination with the national maintenance point, will determine the requirement, prepare the standards used in repair, and assess the repair capability of below-depot maintenance activities.

### **7-14. The MAIT program**

*a.* The MAIT program is designed to—

(1) Upgrade Army materiel and units to a state of readiness consistent with assigned goals needed to carry out the Army mission.

(2) Develop unit capabilities to meet mobilization and contingency operations.

(3) Ensure that commanders at all levels are provided assistance in identifying and resolving maintenance, supply, and maintenance management problems within their units.

(4) Provide effective and responsive assistance and instruction to units and activities.

(5) Augment the commander's capability for providing maintenance and associated logistic assistance, instruction assistance, and instruction to organic, attached, and supported units.

(6) Identify systemic problems in maintenance management and provide assistance to improve management of maintenance workload at unit, DS, and GS levels.

(7) Generate an atmosphere of mutual trust between the MAIT and the supported unit. This allows unit personnel to

participate actively in problem identification and resolution without fear that any derogatory information will be used as a basis for adverse command action.

*b.* The DCS, G-4 will—

- (1) Develop the MAIT program.
- (2) Approve or disapprove requests for program changes or deviation.

*c.* Major Army commanders, except the CGs, USAMC, TRADOC, and U.S. Army Criminal Investigation Command, and the Commander, Military Traffic Management Command, will—

- (1) Establish a MAIT program to support Active Army units.
- (2) Establish a MAIT program at the readiness group or comparable level to support Army Reserve units. Installations, RGs, or major U.S. Army Reserve commands that do not have a resident MAIT will request assistance and instruction support from the closest MAIT.
- (3) Ensure that MAITs are technically self-sufficient for the routine support mission.
- (4) Provide for the temporary augmentation of MAIT to fill short-term or infrequent requirements for equipment and management skills not available from local resources.
- (5) Ensure that sufficient funds and personnel are budgeted and allocated for MAIT operations.
- (6) Coordinate technical assistance programs to provide maximum benefit to supported units with minimum resources.
- (7) Ensure that any acronym that could be misconstrued as being MAIT is not used.
- (8) Review MAIT operations annually to ensure maximum program effectiveness.
- (9) Submit recommendations for MAIT program improvement or deviation to Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.
- (10) Upon request, provide backup MAIT support to units of the ARNG. Such support should be reciprocal and is normally reimbursable.
- (11) Schedule periodic conferences between MACOM and CONUS/installation MAIT coordinators to highlight and resolve conflicts in policy and procedures.

*d.* The CNGB will ensure that MAIT program services are furnished to units of the ARNG.

*e.* CONUS and OCONUS installations, corps, divisions, and ARNG and RSC commanders will—

- (1) Have operational control of assigned MAITs.
- (2) Ensure that MAIT members are technically competent and possess the ability to provide quality assistance and instruction.
- (3) Ensure that assigned MAIT personnel receive training to maintain technical competence and remain current with changing logistics policies and procedures and instructional techniques. The MAIT will receive NET.
- (4) Request assistance from supporting activities and/or higher headquarters to correct problems that cannot be corrected within the command.
- (5) Request, through channels, modifications to TOE/MTOE or TDA for personnel and equipment in support of the MAIT program.
- (6) Provide resources needed to carry out the MAIT program.
- (7) Periodically evaluate MAIT performance and effectiveness.
- (8) Provide for periodic conferences between MAITs and evaluation and inspection teams to highlight and resolve possible conflicts in interpretation of logistic policy and procedures.

*f.* Commanders of units visited will—

- (1) Ensure that appropriate personnel, materiel, and records are available for the MAIT during scheduled assistance and instruction visits.
- (2) Take prompt action to correct problems.
- (3) Request assistance from supporting activities and/or higher headquarters to correct problems that cannot be corrected by the unit.
- (4) Retain the latest two MAIT visit summaries.

*g.* MAIT program policy:

- (1) The MAIT program will be operated as a decentralized program.
  - (a) Teams will be established at installations or comparable levels in CONUS and at MACOM, corps, division, separate brigade, or comparable levels in overseas areas.
  - (b) The teams will be clearly identified in mission and function statements or operating regulations.
  - (c) A MAIT will not be established when troop or equipment density does not warrant it. In such cases, the responsibility for providing assistance and instruction is assigned to an established team within the geographic location according to AR 5-9.
- (2) Personnel assigned to a MAIT will not participate in command inspections, annual general inspections, annual training evaluations, spot checks, roadside inspections, command logistics review teams, or any other command evaluation program.

- (3) When resources permit, each Active Army and Reserve Component unit will be visited annually. Visits to Reserve Component units will take place during scheduled drills and assemblies or during annual training periods.
- (4) MAIT visits will not be scheduled during any inspection.
- (5) Commanders of units visited are provided a summary report of the visit.
- (6) MAIT visit results and summaries will not be given ratings or scores, nor will the information be revealed to any inspection agency. When the MAIT function is contracted, MAIT visit results will be available to quality assurance evaluators.
- (7) MAITs provide semiannual overview briefings or published status reviews to brigade, division, corps, installation, and senior-level Reserve Component commanders. Briefings should highlight significant problems encountered that apply command-wide but will not identify specific units involved. Special emphasis is placed on providing the commander an overall assessment of conduct and supervision of PMCS within the command.
- h. MAIT procedures:*
- (1) The MAIT consists of the minimum number of specialists required to meet the needs of the visited unit.
- (2) MAIT visits will be directed for specific units not meeting acceptable readiness standards or levels. Direct communication will be established between the units in need of assistance and the supporting MAIT.
- (3) Participation by DS soldiers in MAIT visits is encouraged.
- (4) Coordination between the unit and Active Component MAITs will take place at least 7 working days prior to a directed or programmed visit. ARNG MAITs will coordinate visits at least 30 calendar days prior to a directed or programmed visit.
- (5) MAITs, as a minimum, will have the capability to assist and instruct units in improving operations and management in the following areas:
- (a) Operator requirements.*
  - (b) Preventive maintenance and equipment repair.*
  - (c) Equipment condition and serviceability.*
  - (d) Materiel condition status reporting.*
  - (e) Administrative storage.*
  - (f) Maintenance records and reports management.*
  - (g) Calibration management.*
  - (h) Proper use of tools and test equipment, troubleshooting, and fault diagnosis.*
  - (i) Maintenance personnel management and training.*
  - (j) Publications account management, distribution of publications, and proper use of publications.*
  - (k) Shop layout.*
  - (l) Planning, production, and quality control procedures.*
  - (m) Safety.*
  - (n) Shop operations, including SOPs.*
  - (o) Facilities.*
  - (p) PLL procedures and PLL accountability.*
  - (q) Equipment recovery and evacuation.*
  - (r) Proper implementation of the Army Warranty Program.*
  - (s) Army modernization training.*
  - (t) Army Oil Analysis Program.*
  - (u) Dept of Defense Phoenix Award.*
  - (v) U.S. Army Award for Maintenance Excellence.*
  - (w) Quality deficiency reports.*
  - (x) Scheduled services.*
  - (y) CARC/ CPP.*
  - (z) Hazardous materiel (HAZMAT) handling.*
  - (aa) Tire maintenance.*
- (6) The MAIT will consist of a team chief and sufficient personnel to provide effective assistance and instruction to supported units. Team size depends on the following:
- (a) Number and type of supported units and their geographic dispersion.*
  - (b) Density and type of equipment supported.*
  - (c) Commodities and areas that assistance and instruction will address.*
  - (d) Frequency and time allotted for visits.*
- (7) Military and civilian personnel selected for assignment to MAITs will meet the following criteria:
- (a) Possess technical skills, knowledge, and ability in their particular commodity or specialty areas.*
  - (b) Have a broad general knowledge in a related secondary logistics field.*

- (8) MAIT personnel authorizations should provide sufficient spaces to maintain program continuity during periods of personnel turbulence.
- (9) Visits to units with specialized equipment (for example, aviation, medical, signal, missile) may require temporary addition of qualified personnel.
- (10) The MAIT personnel will be cleared for access to defense information according to AR 380–67. Clearance will be equal to the classification of the equipment and documents to be reviewed during the visits.
- (11) Responses to a request for assistance and instruction will be made by—
- (a) Telephone or electrical means.
  - (b) Visit of selected personnel.
  - (c) Visit of entire team.
- (12) MAIT visits are categorized as—
- (a) Requested visits arranged by the unit commander requiring a MAIT or by commanders requesting a MAIT for subordinate units.
  - (b) Directed visits scheduled in advance.
  - (c) Programmed visits scheduled in advance.
- (13) Requested and directed visits will be given precedence over programmed visits.
- (14) To ensure effectiveness of the program, the MAIT chief will provide the commander of the unit to be visited with the guidance shown below. It should be stressed that a minimum of unit preparation is desired.
- (a) Key personnel are to be made available, including crews and operators who will receive assistance and instruction.
  - (b) Materiel records and reports to support assistance and instruction are to be made available but not formally displayed.
  - (c) Unit personnel are to be made available as guides to accompany MAIT members to the assistance and instruction site.
  - (d) Tools, equipment, and supplies needed for assistance and instruction are to be made available.
  - (e) Equipment required for training during MAIT visits will be configured as needed. Formal layouts and displays are discouraged.
- (15) Procedures for the conduct of MAIT visits depend on the type of assistance and instruction to be provided. In providing responsive assistance and instruction to the unit in need, the MAIT will provide—
- (a) Assistance and instruction on materiel, records, procedures, and reports as requested or identified by the units or by higher headquarters.
  - (b) Assistance and instruction, as determined by MAIT, through review of materiel, records, procedures, and reports.
- (16) The amount of materiel, records, and reports reviewed will be governed by—
- (a) Unit commander's recommendation.
  - (b) Availability of materiel, records, and reports.
  - (c) Available time for both the MAIT and the unit visited.
- (17) Operators and unit maintenance personnel will perform preventative maintenance checks and/or service requirements on selected materiel according to applicable technical publications. The results will be recorded on equipment inspection and maintenance work sheet(s). Assistance and instruction team members will observe their performance and provide assistance and instruction as needed.
- (18) Upon conclusion of the visit, the MAIT chief will—
- (a) Conduct an informal review of the visit. Persons present for the review will include the commander of the unit visited and others selected by the commander. The critique should cover the total scope of the visit and include problem areas, remedial action initiated or recommended, and areas requiring follow-up.
  - (b) Prepare a visit summary.
  - (c) Discuss areas requiring external assistance with the unit commander. After this discussion, a separate letter will be prepared to describe problems that require outside assistance. The MAIT chief will submit this letter to the organization, headquarters, activity, or agency capable of taking action. The chief will also furnish a copy of the letter to the commander of the unit visited.
  - (d) Give a MAIT evaluation questionnaire to the unit commander.
- (19) The unit commander will assess the performance of individual team members and the quality of assistance and instruction provided. This will be accomplished by completing the questionnaire provided by the MAIT chief.
- (20) The success of the MAIT program depends largely on the quality of the assistance and instruction provided. To enhance the program, it is essential that the MAIT capabilities be widely publicized. Suggested methods are flyers, daily bulletin notices, articles in local news media, referral cards, command Web sites, and briefings for newly assigned key personnel. Another effective method is to distribute a newsletter to supported units. Some of the subject areas that can be included in a newsletter are—
- (a) MAIT lessons learned.

- (b) Logistics information of general interest.
- (c) Solutions to common problems encountered by MAIT.
- (d) Situations that require quick remedial action.
- (e) Mobilization.

(21) The primary duty of MAITs during mobilization is to augment the resources of the command or installation to which they are assigned. The teams will also develop the capability to perform the following tasks during mobilization and intensified buildup operations:

(a) Provide assistance and instruction in equipment pre-embarkation reviews. This includes validation of condition classification.

(b) Augment MACOM assistance team capabilities.

(c) Develop on-site training programs.

(22) Team integrity should be retained, where possible, in order to facilitate efficient return to peacetime operations.

(23) Consideration will be given to the allocation of mobilization augmentees for assignment to MAITs.

(24) Records and reports will be handled as follows:

(a) The MAITs will maintain a DA Form 5480 (Maintenance Request and Assignment Register) of visits conducted. DA Form 5480 is available on the Army Electronic Library (AEL) CD-ROM (EM 0001) and the APD Web site (<http://www.usapa.army.mil>). All time expended by team members, including hours for responding to telephone requests, will be shown on the register. These data will be used to support requests for additional TDA spaces or to defend existing MAIT manning levels.

(b) A visit summary will be prepared after each visit. It will describe actions to be taken and problems that require assistance of a support organization or higher headquarters.

(c) Requested visit: Prepare two copies of the visit summary, three if the visit was requested by a commander for a subordinate unit. One copy will be furnished to the commander of the unit visited, one copy to the commander (if requested for a subordinate unit), and one to the MAIT privileged information file.

(d) Directed visit: Prepare three copies of the visit summary. One copy will be furnished to the commander of the unit visited, one to the commander directing the visit, and one to the MAIT privileged information file.

(e) Programmed visit: Prepare two copies of the visit summary. One copy will be furnished to the commander of the unit visited and one to the MAIT privileged information file.

(f) The MAIT will provide a written report quarterly to the headquarters of the activity to which it is assigned. The report will contain personnel spaces authorized, personnel assigned, number of units visited/man-days expended, number of telephone inquiries completed, man-days lost to TDY or leave, number of unit requests not completed and reasons why, and suggestions for improvement of the MAIT program.

## **7-15. The UIT program**

a. UIT by serial number of selected items and installed components is required by DOD 4140.1-R, DOD 4000.25-2-M, and AR 710-3. The objective of the UIT program is to maintain visibility of each uniquely identified asset for the primary purpose of inventory control and/or engineering analysis. Security, accountability, safety, maintenance, operational readiness, warranty applicability, and other areas that may benefit from the tracking process will be subsets of the inventory control or engineering analysis functions.

b. UIT reporting requirements for Army-controlled small arms, security risk I non-nuclear missiles and rockets, controlled cryptographic items, and radiological testing and tracking assets are set forth in AR 710-3. Additional assets for which serial number tracking via UIT is deemed necessary will be approved by HQDA (DALO-SMM).

c. All assets within the supply system subject to UIT tracking will be identified with a unique item identifier (UII) that uniquely identifies each individual asset being controlled or managed. A UII can be the item's serial number, the vehicle identification number, and so on, as long as no other UIT asset has the same identifier within the NSN or NIIN. Installed components, as specified in AR 710-3, also require UII assignment.

d. All UIT programs will include provisions for data entry and tracking using AIT. In that regard, MATDEVs will ensure that new procurements of serial-number-tracked assets include provisions for AIT-readable serial number markings to be applied during manufacture.

## **7-16. Ground Safety Notification System**

a. The Ground Safety Notification System (GSNS) is used to disseminate high, medium, and low safety messages to the field. These messages include the safety of use message (SOUM) and the ground precautionary message (GPM).

b. When a materiel defect or hazardous condition that can cause death or injury to Army personnel or damage to Army equipment is discovered, a GSNS message is prepared in accordance with AR 750-6 and an SOUM or GPM is approved for release to the field.

c. An SOUM is issued when the risk condition assessment is a high or medium safety risk according to AR 385-16. The following procedures apply:

- (1) Upon verification of a high safety risk condition, the program sponsor (PS) immediately notifies the USASC and

prepares a draft SOUM for coordination. Upon completion of coordination within the appropriate USAMC commodity command and approval by USASC, the PS notifies HQDA (DALO-SMM) (e-mail: smmrtl@hqda.army.mil), which will ensure proper staffing at the HQDA level and secure final release approval from the DCS, G-4.

(2) Upon verification of a medium safety risk condition and determination by the PS that a SOUM will be issued, the procedures in (1), above, will be followed.

(3) All SOUMs will be transmitted as immediate precedence messages.

(4) A unique control number will be issued at the time of transmittal for each SOUM.

*d.* A GPM is issued when the risk condition assessment is a medium or low safety risk according to AR 385-16. The following procedures apply:

(1) For a medium safety risk condition for which the PS has determined that a SOUM is not required, a GPM is prepared and staffed within the appropriate USAMC commodity command and then is approved for release by the appropriate USAMC commodity commander.

(2) For a low safety risk condition, the PS prepares a GPM and staffs it within the appropriate USAMC commodity command, with approval for release by the appropriate USAMC commodity commander.

(3) All GPMs are to be transmitted as routine precedence messages.

(4) A unique control number will be issued at the time of transmittal for each GPM.

*e.* SOUMs and GPMs are addressed to MACOM commanders using address indicator group (AIG) 12523.

*f.* MACOMs will immediately acknowledge receipt of a SOUM/GPM to the originating organization/office listed on the message. If the MACOM fails to acknowledge receipt within 5 working days, the message originator will contact the MACOMs that failed to verify receipt.

*g.* MACOMs will disseminate SOUMs and GPMs within 24 hours to all subordinate units according to AR 25-11.

*h.* Compliance actions:

(1) MACOMs will submit compliance reports as required by the SOUM/GPM.

(2) Army equipment users will report compliance per their MACOM instructions and directives and immediately report additional deficiencies discovered.

(3) Depot activities will acknowledge receipt of each SOUM/GPM, estimate when safety requirements will be accomplished, and confirm safety compliance by equipment serial number and SOUM/GPM date/time group.

#### **7-17. Maintenance advisory message**

A maintenance advisory message (MAM) provides new or different pertinent nonsafety-related maintenance or operational instructions and information. Prior to publishing, all MAMs will be coordinated through the appropriate USAMC commodity command safety office to ensure their content is not safety related. The only authorized method of informing MACOMs of hazardous equipment conditions is through the Ground Safety Notification System.

#### **7-18. Corrosion prevention and control program**

*a.* The corrosion prevention and control (CPC) program responsibilities and guidance are in accordance with AR 750-59.

*b.* CPC is a critical consideration in assuring the sustained performance, readiness, economical operation, and service life of Army systems and equipment. It requires active consideration in the materiel development, acquisition, fielding, operation, and storage processes. CPC requires life cycle management planning and action in design, development, testing, fielding, training, and maintenance.

*c.* CPC will be achieved by incorporation of the latest state-of-the-art corrosion control technology in the original equipment design, in the manufacturing, in all levels of maintenance, in supply, and in the storage processes. The objective is to minimize corrosion by using design and manufacturing practices that address selection of materials; coatings and surface treatments; production processes; process specifications; system geometry; material limitations; environmental extremes; storage and ready conditions; preservation and packaging requirements; and repairs, overhaul, and spare parts requirements.

*d.* There are several proven technologies/procedures that units can employ to reduce the effects of corrosion on their equipment; two examples are the Controlled Humidity Preservation Program and corrosion inhibiting preventative maintenance applications:

(1) Controlled Humidity Preservation Program:

(a) Long-term preservation (LTP) is permanent shelter designed to maintain equipment stored for a period of 1 to 3 years at a specific relative humidity.

(b) Modified long-term preservation provides the same benefits of LTP but is intended for storage of equipment from 90 days to 1 year.

(c) Operational preservation is an easily installed capability designed for crew compartments and enclosed equipment spaces (such as M1, M2, M3, M109, and so on) to reduce the affects of moisture on electronic components.

(d) Single Vehicle Environment Stabilization System is designed to prevent moisture in crew compartments of specific tactical vehicles (M1, M2/3, M109, M88).

(2) CPC inhibitors can be applied by unit-level personnel and are encouraged as a minimum measure to prevent the effects of corrosion.

(a) Only the use of approved CPC products is authorized.

(b) The USAMC, ARL is the approval authority for these products.

## Chapter 8 Depot Maintenance

### 8-1. General

a. This chapter provides policy and responsibilities governing the planning, programming, budgeting, and execution of depot maintenance.

b. The purpose of the DMCB is to provide direction and guidance for depot maintenance programs. This responsibility includes determination of depot maintenance programs, oversight of the work-loading of organic depots, and oversight of the execution of the depot maintenance program. Included in the responsibility for oversight of the execution is ensuring compliance with Section 2466, Title 10, United States Code (10 USC 2466) (“50/50 Law”), and oversight of 10 USC 2464 (“Core Requirements”).

c. The term *depot-level maintenance* consists of material maintenance or repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies and the testing and reclamation of equipment as necessary, regardless of source of funds for the maintenance or repair or the location at which the maintenance or repair is performed. The term includes:

(1) All aspects of software maintenance classified by DOD as of 1 July 1995 as depot-level maintenance and repair.

(2) Interim contractor support or contractor logistics support (or any similar contractor support), to the extent that such support is for the performance of services described in the preceding sentence.

d. In accordance with 10 USC 2460, depot maintenance does not include the procurement of major modifications or upgrades of weapon systems that are designed to improve system performance. A major upgrade program covered by this exception could continue to be performed by private- or public-sector activities. The term also does not include the procurement of parts for safety modifications. However, the term does include the installation effort for the excluded modifications and upgrades mentioned above.

e. Depot maintenance is characterized by the following two standards of maintenance:

(1) Overhaul is the national maintenance standard for all items repaired and returned to stock and is defined as maintenance that restores equipment or components to a completely serviceable condition with a measurable (expected) life. This process involves inspection and diagnosis according to the DMWR or a similar technical direction that identifies all components exhibiting wear and directs the replacement or adjustment of those items to applicable equipment specifications.

(2) Rebuild is a near zero time/zero mile maintenance process that is defined as an end item total tear down and replacement of all expendable components, all aged components, reconditioning of structural components, and the procedures identified for overhaul of the end item. Recapitalization of an item includes rebuild and should restore the item to a standard configuration installing all outstanding MWOs/engineering change proposals in the process and allow for technology insertion.

f. Depot maintenance also includes—

(1) Provision of stocks of serviceable equipment by using more-extensive facilities for repair than are available in lower-level maintenance activities. A DMWR or statement of work is required as guidance for the repair, overhaul, and rebuild processes.

(2) Technical support that exceeds the capability of DS, GS, and AVIM maintenance units as required.

(3) Manufacturing of end items and parts not provided by or stocked in the wholesale supply system.

(4) Special inspections and modifications of equipment requiring extensive disassembly or elaborate test equipment. These are performed, when practical, as part of cyclic overhaul or special depot maintenance programs.

(5) Nondestructive testing to determine the acceptability of removed used parts.

(6) Installation of all outstanding MWOs and minor alterations directed by the materiel proponent.

(7) PPSS, which is the sustainment of the operational software embedded in weapon systems after closure or the production line.

(8) Depot repair and return programs. See paragraph 8-6 for details.

g. Depot maintenance support programs will be planned, programmed, and executed to sustain weapon/support systems and secondary item inventory in a state of operational readiness. It is essential that the capability for overhaul of all items coded for depot-level repair be available at time of weapon system FUED.

h. Depot maintenance will be performed by selected TDA industrial activities operated by the Army, other military Services or government agencies, or by private-sector firms.



*i.* Determination of the need for FRA to provide depot-level maintenance on select items that directly impact materiel readiness of critical systems/equipment will be given priority during the depot maintenance planning phase. As part of the planning effort, consideration will be given to the need of the FRA to consolidate and control contractor(s) providing depot-level support to user-level operations. Depot planning will also consider this resource in developing contingency depot support for DA-directed deployments.

*j.* Overseas depot maintenance will be performed: when directed by the NMM, depot maintenance will be performed within the theater of operations to achieve the readiness or sustainability goals of deployed forces or when more cost-effective. When evaluating cost-effectiveness, consider repair cycle float, spare parts, facilities, transportation, plant equipment, test equipment, personnel, supply pipeline costs, and the impact on the CONUS base, including mobilization/surge capability.

*k.* Overseas depot maintenance will include the cost accounting and production reporting provisions of DFAS-IN Regulation 37-100.

*l.* An overseas FRA may be established by USAMC when it has been determined, in coordination with the appropriate theater commander, that in-country, forward depot support by depot personnel or contractor logistic support operations is needed to sustain mission critical systems or components.

## **8-2. Depot maintenance core capability**

*a.* Core is the capability maintained within DOD organic depots to meet readiness and sustainability requirements of the Army weapon systems that support the Joint Chiefs of Staff (JCS) contingency scenario(s). The MATDEV must develop the capability to repair new weapon systems identified as requiring core logistics capability at GOGO facilities within 4 years after achieving initial operational capability. Core depot maintenance capabilities will comprise only the minimum facilities, equipment, and skilled personnel necessary to ensure a ready and controlled source of required technical competence.

*b.* Core logistics workload required for maintenance of core logistics capabilities must be performed at GOGO facilities of a military department. Performance of core logistics workload will not be contracted out to nongovernment personnel.

*c.* Weapon systems, equipment, or components designated as mission essential, but not needed to sustain core capability, may be maintained in the private sector if the required capability can be provided with acceptable risk, reliability, and efficiency.

*d.* USAMC will use the DOD standard methodology (see app F) to determine required depot maintenance core capabilities and the workload needed to sustain these capabilities on a biennial basis.

*e.* Core capabilities and the workload required to support these capabilities will be reviewed every 2 years or more frequently, as required.

*f.* Per AR 70-1, the core analysis and accompanying risk analysis will be presented at the milestone B ASARC or equivalent review for ACAT II and below programs and documented in the milestone B ADM.

## **8-3. Inter-Service depot maintenance support**

*a.* The joint depot maintenance program is applicable to all acquisition and logistic support activities planning, requiring, or providing depot maintenance support. The primary objective of this program is to achieve increased effectiveness through use of the combined service depot maintenance resources. This reduces redundant capabilities while sustaining essential mission support needs. Depot maintenance inter-Service support will be used and provided to the maximum extent possible.

*b.* Army commands, activities, and organizations will seek mutually beneficial support arrangements with other Army organizations and with other Services/agencies when feasible and not detrimental to mission and military requirements.

*c.* Army commands, activities, and organizations will provide support to other Services/agencies to the extent possible within given capabilities, and when not detrimental to the mission and military requirements, upon request.

*d.* A joint depot MSP will be developed by the MSCs for all cases where the same supportable materiel system is being procured for use, or being used, by two or more military Services. The joint depot MSP will be submitted to HQ USAMC for approval before implementation. Each plan will—

(1) Include an assessment of existing depot maintenance capabilities of the military Services involved.

(2) Indicate the basic considerations for inter-Service support and how the proposed depot maintenance assignments make maximum use of existing DOD capabilities and reduce to a minimum the need for new investment in additional resources.

(3) Indicate the planned distribution of depot maintenance workloads between Army, other DOD, and commercial sources over the expected life of the materiel system.

## **8-4. Depot maintenance SOR selection**

*a.* The weapon system PM/PEO and the MSC will adhere to current U.S. public laws, DOD directives, and Army policies in determining a depot maintenance SOR. Planning for depot maintenance source of repair should commence

at milestone I. In accordance with DODD 4151.18, a logical decision process will be used to assign the depot maintenance SOR to either an organic Army, inter-Service, or contract source. This process must address legislative and DOD policy requirements such as core depot maintenance, the 50 percent maximum limit on contracted depot maintenance workload, and competition for reassignment of workload valued at \$3 million or greater.

*b.* To the extent legislation and policy permit, workload determined not to be needed to sustain depot maintenance core capability will be evaluated to determine whether such workload is appropriate for contracting, including contracting under full and open competition, where appropriate. The best-value (the most cost-effective alternative) depot maintenance support will be established from among inter-Service, intra-Service, and contract sources. In the case of systems and equipment used by more than one military Service or DOD agency, workload must be consolidated into a single common or joint Service contract consistent with the readiness requirements of the Army.

*c.* All new depot maintenance workload and planned changes of performance location for existing workload will be subject to a joint Service review and SOR assignment to a specific depot facility in accordance with the provisions of the joint depot maintenance program.

*d.* The PM/PEO will, in conjunction with the MSC inter-Service support office, identify the requirement for the depot maintenance assignment. USAMC, as the executive agent for depot maintenance, will take action to initiate the appropriate joint Service review. USAMC will track the joint Service review to completion and will ensure all necessary inter-Service coordination actions are properly executed.

*e.* Upon completion of the joint Service review and release of the joint Service decision, USAMC will notify the appropriate PM/PEO and MSC inter-Service support office of the implementation actions necessary.

*f.* Each PM/PEO will ensure that the decision analysis, including depot core, risk, and best value analysis, supporting the SOR decision is performed and documented in the milestone ASARC ADM. The results will be presented/reviewed at the milestone II ASARC. Documentation should be updated, as appropriate, throughout the life cycle of the system.

#### **8-5. Contracting with commercial sources**

The negotiating, awarding, funding, and managing of national maintenance contracts are normally the responsibility of USAMC. Included are mandatory (proprietary) type contracts and contracts for workload beyond the core workloads required in organic depots. However, a depot is permitted to negotiate, award, and administer a maintenance contract in those instances where the services of a contractor are needed to support the completion of an authorized in-house job order. This local support will not exceed 20 percent of the total dollar value of the order.

#### **8-6. Reimbursable programs**

A depot repair and return program is a process whereby an item of equipment is forwarded to a depot, FRA, or contract facility for repair and the same/like item is returned to the forwarding activity. An MOA will be established between the customer and the depot. The rate charged to the customer will be a burdened rate to include all local installation overhead and the applicable AWCF surcharge. Depot maintenance of USAR materiel will be provided by MOU/MOA with OCAR.

#### **8-7. Post production software support**

*a.* Life cycle software support (LCSS) embraces all software-related activities for a weapon systems embedded operational software. PPSS is a subset of LCSS that begins with the completion of the weapon system hardware production.

*b.* Planning and programming for PPSS begins prior to milestone I of the weapon system. PPSS execution begins during the first fiscal year after the hardware production of the weapon system is completed.

*c.* The MATDEV is responsible for all software support and PPBES activities until the weapon system hardware production is complete. The MATDEV will not transition responsibility to the supporting Life Cycle Software Engineering Center (LCSEC) until the first full fiscal year after the hardware production lines closes. Transition will not occur prior to the completion of fielding of the software for those weapon systems whose software development is not tied to a specific hardware production line.

*d.* When it is appropriate to transition software support PPBES responsibility from the MATDEV to the LCSEC prior to the end of the weapon system hardware production (to include block upgrades), the MATDEV, in coordination with the LCSEC, will obtain ODCS, G-4 and ASA(ALT) approval and document the approved transition date.

#### **8-8. Acceptance criteria**

*a.* A quality assurance and reliability management program will be established and maintained by each U.S. Army depot for its depot maintenance activities.

*b.* U.S. Army depots will—

- (1) Ensure quality requirements are developed and documented early in the life cycle of the weapon system.
- (2) Establish cost-effective quality assurance procedures that assure product quality and reliability in maintenance shops.

(3) Provide a capability for independent and objective assessment of the quality and reliability of depot maintenance output.

(4) Ensure that only depot maintenance output that meets quality and reliability standards is distributed.

c. Output that fails to meet these standards will be scrapped, reworked, repaired, or otherwise disposed of, as appropriate.

## **8–9. Planning, programming, budgeting, and execution of depot maintenance workload**

### *a. Planning.*

(1) A flexible depot maintenance base capable of expansion to react to emergency military needs will be established and sustained. Depot maintenance support will be planned and completed by the combined use of government and commercial sources.

(2) An organic depot maintenance capability (including trained personnel) will be established and sustained on the basis of workloads generated by those weapon systems and materiel that are essential to completion of the Army's primary roles and missions. This capability will be sized to workload as forecasted in the Army Workload and Performance System, will maintain surge capacity, and will sustain the reconstitution capabilities. These capabilities include initial surges of 180 days mobilization, emergencies, and maintenance support to commands with mission essential materiel. DOD 4151.18–H will be used to determine the capacity of depot-level activities.

(3) Workload will be based on expected returns and demands as well as validated performance standards. Where such standards have not been developed or are not available, historical performance data will be used. Where neither performance standards nor historical performance data are available, engineering projections developed during maintenance support planning will be used. Workload standards will be adjusted based on changes in any capacity or as production data matures.

(4) Resource planning for depot maintenance manpower, floor space, and plant equipment should provide for the efficient accomplishment of all depot materiel maintenance programs.

### *b. Programming and budgeting.*

(1) Requirements determination will be based on information from the Army Long Range Development Plan, Army acquisition objective, initial issue quantity, equipment modernization and fielding plans, demand history, field operating costs, readiness factors, and other appropriate sources. Force structure, operating tempo, flying hours, equipment retirements and phase-outs, and prior program and budget guidance and decisions should also be considered. Items that are scheduled to be removed from the inventory within 2 years will not normally be considered for overhaul. Modification efforts requiring depot maintenance prior to application of the modification/conversion kit will be programmed in conjunction with existing overhaul and repair schedules.

(2) Prioritization of depot maintenance end-item requirements, including PPSS, will be in accordance with the latest ODCS, G–3 prioritization guidance. To obtain a copy, requests should be forwarded to Deputy Chief of Staff, G–3, ATTN: DAMO–FDR, 400 Army Pentagon, Washington DC, 20310–0400. Repair of secondary items will be given highest priority.

(3) All customers of depot maintenance, regardless of source of funds, appropriation, or source of repair, will program requirements for the current year, one budget year, and five out-years for the POM submission. For programming and funding purposes, requirements must be submitted into the Depot Maintenance Operations Planning System (DMOPS) during the first POM after the initial requirement is identified by the customer, but no later than the last POM window prior to the required year of execution. For example, a depot maintenance customer determines in first quarter fiscal year (FY) 01 that there is a projected requirement in FY 05 for depot maintenance of a specific end item. The requirement should be submitted into DMOPS during the FY 03–07 POM (in FY 01) but no later than the FY 05–09 POM update (in FY 03). For execution of requirements, the customer should plan to identify the requirement to the appropriate commodity command not later than the end of the first quarter in the year of execution.

(4) Depot maintenance requirements and their respective funding will be regularly updated to maintain balance between workload programs and approved depot maintenance resources.

(5) Automated management information systems will be used to the maximum extent feasible so that the determination and distribution of workloads may be completed in an effective and timely manner and to efficiently manage program execution.

### *c. PPSS programming and budgeting.*

(1) For planning and programming purposes, a system will not transition into the PPSS phase of its life cycle until the first full fiscal year after the weapon system hardware production is complete. For those weapon systems whose software development is not tied to a specific hardware production line, transition will not occur prior to the completion of fielding of the software.

(2) The MATDEV will plan, program, budget, and execute all mission critical computer resources (MCCR) weapon system software support requirements until the transition of PPBES responsibilities from the MATDEV to the designated LCSEC is completed. The MATDEV and LCSEC will plan and coordinate PPSS with appropriate matrix support elements in order to synchronize the support needed for PPSS. Once the transition is complete, the LCSEC will assume all PPBES responsibilities for the PPSS of the weapon system.

(3) Procurement and/or research, development, test, and evaluation funds will be used for all software support requirements until the weapon system hardware production is completed or in support of significant modifications. OMA funds will be used for software support after the weapon system hardware production is complete. OMA dollars will be planned and programmed by the MATDEV in coordination with the LCSEC through the POM until the first fiscal year OMA funds are used. The MATDEV will use the system Management Decision Packages (MDEPs) to program and budget all software support prior to transition into PPSS. After that, the LCSEC will plan, program, budget, and execute PPSS requirements.

(4) Total system program funding (such as hardware and software) will be balanced to attain maximum battlefield functionality. The MATDEV MSC and LCSEC will jointly review the system's programmed requirements and funding across all appropriations and ensure the funding profile is sufficient and in compliance with HQDA financial policy to maintain visibility of both PPSS and system hardware requirements and funding.

(5) PPSS requirements will be defined as the level of effort necessary to retain the minimum essential capabilities of the system fielded (this means do no more than keep the system that was fielded operational), correct operational defects, and maintain minimum battlefield functionality. Include funding for retention of a software engineering capability.

(6) LCSEC core costs are not to be distributed as part of the system PPSS cost.

(7) COTS software may become a PPSS funding consideration only if the weapon system uses commercial computer hardware or software that has been modified, the software is embedded and cannot be vendor updated, or the software has a life cycle of greater than 5 years.

*d. Execution of depot-level workload.* No more than 50 percent of the funds made available for each fiscal year will be applied to contract repair programs. All Army MACOMs will report the funding executed to accomplish depot activities regardless of source of funds or the location where the maintenance is performed. This report will be submitted to HQDA (DALO-SMM) on a quarterly basis 30 days after the close of the quarter. (RCS exempt: AR 335-15, para 5-2b(1).)

(1) Depot maintenance carryover is that portion of the maintenance program that is not completed during the year of obligation and, therefore, carried into the subsequent FY for completion. It must be executable for all customer and work processing codes.

(2) Carryover is inherent in any production or manufacturing process and is required to provide production stability and continuity during the transition between fiscal years.

(3) To ensure that the depot maintenance carryover is at an acceptable level, no more than 3 months (expressed in dollars) of organic depot maintenance will be carried over into the next execution year.

(4) The 3-month carryover will be calculated based on the total direct Army operations and maintenance and the AWCF business area programs in accordance with the FMR. Specifically excluded from the carryover calculation are inter- and intra-Defense Working Capital Fund (DWCF) orders (excluding supply), FMS, base realignment and closure, non-DOD orders, and direct contractual obligations placed on contract by a depot.

## **8-10. Mobilization planning**

*a.* Requirements identified specifically for mobilization, surge, or reconstitution purposes will be separately identified to prevent mixing of mobilization requirements with normal maintenance requirements.

*b.* Maintenance mobilization workload requirements include cyclic/normal overhaul/rebuild, battle/crash damage overhaul/rebuild, activation of items taken from long-term storage, modifications, fabrication/manufacture, reclamation/disassembly, and maintenance assistance (support for deployed and deploying units).

*c.* A depot maintenance mobilization plan (DMMP) will be developed and include major and secondary items, ARNG and USAR requirements, inter-Service and interdepartmental orders, and essential contracts.

*d.* Depot maintenance mobilization secondary items requirements will be forecast per the mobilization schedule.

*e.* The principal for the agent's commitment at the time of the initial depot maintenance inter-Service support agreement (DMISA) will project inter-Service maintenance mobilization requirements. Negotiated DMISAs will remain in effect after the date of mobilization.

*f.* Mobilization requirements to support allies will consist of continuation of agreements in effect on date of mobilization. Unless more-specific information is available for a particular program, depot maintenance workloads generated through international logistics for those engaged or mobilized countries will increase at the same rate as a comparable U.S. Army item during a period of mobilization.

*g.* Closed loop support procedures (see AR 710-1) will be implemented for critical items for which production cannot satisfy mobilization demands. Closed loop support programs will be identified with the appropriate management interest item code (MIIC).

*h.* Repair/overhaul MEL limits will be relaxed or eliminated.

*i.* Plans will be reviewed at least every 2 years in conjunction with the core computation process.

*j.* DMMPs will include—

(1) Depot maintenance mobilization requirements for materiel that is not the responsibility of USAMC but is accomplished in CONUS depots.

(2) Requirements in terms of man-hours, skills, and support equipment required by deploying and deployed units. USAMC will coordinate with FORSCOM in identifying these requirements.

(3) Requirements in terms of man-hours, skills, and support equipment required for reconstitution of equipment based on increased operational tempo (OPTEMPO), equipment availability data, and the defense program guidance (DPG).

(4) A depot maintenance mobilization workload (DMMW) distribution plan developed using mathematical modeling techniques. The techniques used should provide for a gradual post-mobilization build-up from peacetime to full capacity within 6 months after mobilization. This technique will incorporate the requirements to reconstitute force structure capabilities at the end of conflicts based on time frames identified in the DPG.

(5) Identification of DMMWs in excess of organic capacity (see AR 700–90): DMMW will be initially assessed against core capability and capacity. If DMMW is less than core capability, core will be reassessed using approved methodology. DMMW in excess of organic capacity and beyond the capability of all depots will be assigned to an alternate source.

### **8–11. Depot maintenance plant equipment**

*a.* DMPE requirements will be identified in the DMSP for all new equipment entering the Army inventory that will require depot-level repair in DOD depots. DMPE may consist of items on-hand not requiring modification, on-hand requiring modification or adapters, and new equipment.

*b.* MATDEVs will ensure that required DMPE capability is developed/procured for new weapon systems to coincide with the generation of the first repairable assets.

*c.* USAMC is responsible for coordination to assure DMPE is available at the depot maintenance activity to support assigned depot maintenance programs. The programs will be based on requirements developed during programming and budget cycles.

*d.* An annual commitment for DMPE will be established against the Army Working Capital Fund and programmed DMPE projects.

*e.* Depot manuals will be acquired/prepared for DMPE. Maximum use will be made of COTS manuals as prescribed by AR 25–30.

### **8–12. Training**

*a.* USAMC will provide maximum support to the ARNG and the USAR training at USAMC installations/activities at minimum cost to RC units. Identifiable incremental costs for installation support furnished to the RC in support of active duty for training or IDT are reimbursable per AR 37–49. Incremental costs are only those costs that would not have been incurred had the unit not been supported.

*b.* Depot/depot activities will—

(1) Provide advice and technical assistance in support of the premobilization training of assigned RC units to improve their training level, overall readiness, and mission capability. RC units may also be in an affiliation status with their depot/activity.

(2) Participate in the AT scheduling process for RC units and be given priority for training dates at all USAMC installations.

(3) Coordinate required training assistance and support with the USAR and NGB.

*c.* RC units will—

(1) Develop plans for accomplishing designated depot and unit mission tasks.

(2) Train at designated USAMC installations a minimum of 1 year out of each 3 while assigned to USAMC depot.

(3) Periodically exercise plans developed for employment when the unit conducts training at the depot/depot activity it will augment upon mobilization.

*d.* USAMC will allocate not more than 10 percent of its potentially contractual cargo/equipment movements as training opportunities for Reserve/Active Component transportation and related troop units. Hazardous cargo movements will also be included as RC training opportunities.

### **8–13. The aviation depot maintenance round-out units**

*a.* There are four AVCRADs and one mobilization AVCRAD control element (MACE). During premobilization, AVCRADs perform intermediate and selected depot-level maintenance as approved by appropriate authority. During mobilization, they provide USAMC with an employable mobilization surge workload capability for depot-level classification and repair of aviation materiel. The aviation depot maintenance round-out units (ADMURUs) consist of teams from the MACE and AVCRADs integrated into composite deployable units.

*b.* When mobilized, USAMC may direct that the AVCRADs perform surge workload at home station. USAMC may direct the AVCRADs in whole or in part to augment CONUS depots or to send teams to support mobilization and deployment of aviation units from CONUS installations. USAMC may also mobilize the aviation depot maintenance round-out units (ADMURUs) and deploy it to augment AMC forward commands in the area of operations. The field support centers will provide a warm base for the deploying ADMURU.

c. MACE and AVCRAD units remain under the command of their respective State adjutant generals during premobilization. Upon mobilization, the MACE and AVCRADs are assigned to USAMC to perform sustainment maintenance. The U.S. Army Aviation and Missile Command (USAMCOM) assumes command and control of the mobilized units or teams when the unit or team arrives on-site (for example, CONUS depot). If the DSMRU deploys in whole or part, the USAMC forward command assumes operational control when the unit arrives in theater.

d. USAMCOM will—

(1) Establish formal mobilization planning, work loading, programming, and training guidance to include unit mission, mobilization station, and related subordinate command responsibilities; premobilization training; and evaluation and training exercise participation.

(2) Establish training criteria for and evaluate the training of the MACE and AVCRADs. Periodic evaluations will be designed to measure mobilization readiness in aviation logistics support, mobilization planning system, operations, training, safety, and administration as a minimum. Coordination of evaluation schedules with the respective State adjutant generals will be accomplished before each fiscal year.

(3) Establish mobilization-training objectives based on wartime missions/workloads.

(4) Provide guidance and assistance to MACE and AVCRADs in implementing the Army training management system.

(5) Provide management guidance necessary to enhance MACE and AVCRAD mobilization readiness through training together with the Chief, NGB.

(6) Provide necessary resources for peculiar training requirements as funds are available and identify and assist in securing resources not available in peacetime channels but required for special depot-level training to meet mobilization requirements.

(7) Provide necessary equipment and subject matter experts as required and as funds are available.

(8) Provide highly qualified aircraft maintenance personnel to AVCRADs, on request, to perform on-site training and assistance.

e. The MACE and AVCRADs will be prepared to deploy the ADMRU within 3 days of mobilization. The MACE and AVCRADs will also be prepared to augment CONUS depots within 3 days of mobilization.

(1) From the day of mobilization to M+90, the remainder of the CONUS AVCRADs clears in-house workload and provides depot assistance to the deploying FORSCOM forces.

(2) At M+91 day and until termination of mobilization, the CONUS AVCRADs perform the assigned USAMC mobilization workload in support of the wholesale aviation pipeline.

#### **8-14. USAMC forward commands**

a. USAMC has established forward commands in theater. They are AMC-CONUS, AMC-Far East, and AMC-Europe. During operations, USAMC will augment the forward commands with a combination of military, DA civilian, and contractor personnel. The mission of the augmented command is to enhance unit readiness by bringing U.S.-based technical capabilities and resources to the battlefield. USAMC can tailor the command to fit the situation. Standard missions include logistics assistance, sustainment maintenance, oil analysis, calibration of equipment, ammunition surveillance, release of Army prepositioned stocks, materiel fielding, and technology insertion. The USAMC forward commands work in coordination and cooperation with the DLA contingency support team.

b. USAMC also manages the Logistics Civil Augmentation Program (LOGCAP) and maintains the LOGCAP support contract. The contract is written for peacetime planning and contingency operations. The support contract has the capability for a wide range of engineering, construction, and logistics services, including maintenance.

#### **8-15. Reclamation at the wholesale level**

a. AR 710-1 contains the policy and procedures for controlling the reclamation of Army-managed equipment at the wholesale level. Reclamation is the process of removing required serviceable and economically repairable components from potential DOD excess or surplus property. These parts are returned to the proper supply activity for future requirements. Residue is processed as disposable property.

b. The commander of each NICP will establish and fund controlled reclamation programs.

(1) Depots with maintenance missions and/or contractor reclaiming sites will perform the task of dismantling end items to obtain component parts.

(2) Depot reclamation procurement request order numbers (PRONs) will be classified as priority or routine. Priority reclamation PRONs (issue priority designators 01-08, used to meet priority requirements) will take precedence over a maintenance program with an equal or lower priority. Routine reclamation orders will be scheduled according to assigned priorities of depot workload.

c. Materiel managers at the NICPs will prepare save lists, with appropriate narrative, for items to be recovered and will forward the lists to the recovery program control officer (RPCO) at the depot performing the recovery operation. Repairable recovered items may be exempted from MEL control if required for high priority programs and there is no practical alternative source of supply. Exemption will be noted on the save list.

d. Depot commanders will designate an RPCO responsible for the coordination of all reclamation programs with NICPs and within the depot and the resolution of any problems. The RPCO will—

- (1) Establish and maintain the current status and a suspense file on all reclamation programs.
- (2) Ensure that sufficient quantities of the major items/assemblies are on hand.
- (3) Close out the reclamation programs only after supply has verified that the receipt action is complete.

e. Only the cost of the reclamation actions will be charged against the reclamation maintenance PRON.

f. Quality assurance procedures will be instituted to—

(1) Inspect and classify removed components as serviceable, unserviceable repairable, or noneconomically repairable.

(2) List missing assemblies/components or shortages from major items in the recovery operation other than those identified as recovered.

(3) Inspect and reclassify the major item on which reclamation was performed.

## **8-16. Repair parts support**

a. U.S. Army depots are authorized to requisition and store spares, repair parts, and consumable items to support valid funded maintenance programs and fabrication requirements.

b. To determine the repair parts necessary to support the maintenance of programmed reparable assets, the MSC and depot will review the depot maintenance forecasted requirements for the fiscal year plus four out-years. Range and quantity of repair parts forecast will be determined through the parts explosion and special program requirements processes by the applicable MSC. For Army-managed items, procurement action will be initiated sufficiently in advance of the induction schedule and take into account all ALT/PLT factors necessary to ensure successful completion of the overhaul requirement. For non-Army managed items, depot requisitions will be submitted in advance of the induction schedule and take into account all order-ship time and ALT/PLT factors necessary to ensure successful completion of the overhaul requirement. Procurement action will be initiated sufficiently in advance of the execution year and take into consideration all administrative procurement and production lead-time factors necessary to ensure successful completion of the overhaul requirement.

c. The materiel manager for the reparable asset will coordinate with other Army material managers, other Services, and DLA/GSA, as applicable, to determine repair part requirements to support the projected/planned maintenance program. Coordination will include forecasting, prepositioning, alteration, or changes necessary to ensure compliance with *b*, above. The item managers will perform similar coordination within their commands on items for which they manage to ensure repair parts readiness.

d. Managers will continually review materiel requirements to ensure that repair parts support is in consonance with induction schedules reported by the performing activity. If the item manager cannot obtain the required parts, the maintenance programmed quantity total will be reduced so that a lower priority materiel requirement may be work-loaded. A temporary shortage of critical maintenance repair parts, which can cause stoppage of a high priority depot program, may be alleviated by local procurement, depot manufacture, controlled exchange, or reclamation.

e. The MSC materiel manager will list, by NSN, those repair parts and components to be requisitioned for use in overhaul that are known from past experience to be in long supply or excess. These listed parts/components may not be repaired during overhaul without prior authorization of the MSC.

f. Stocks authorized for storage by the maintenance directorate are of two basic types: bench-stock and mission stock.

(1) *Bench stocks.* Bench stocks are low-cost, high-usage, common-usage, consumable items used by maintenance personnel at an unpredictable rate. Bench stocks include items such as common hardware, consumable tool parts (such as cutting blades and drill bits), electric/electronic piece parts, bulk materials (such as tubing, sheet metal, and wire), and repair kits composed of consumable materiel.

(a) Depot maintenance shops are authorized to stock up to 7 workdays of bench stock supplies in the work area.

(b) Bench stocks are stored at or near the work area to give repair personnel direct access to the supplies.

(c) Residual repair parts and components will be returned to the NICP and credit applied to the program upon production line completion unless a valid requirement currently exists or is programmed.

(2) *Mission stocks.* Mission stocks are those stocks based on parts explosion for the rebuild, overhaul, and repair programs. They are comprised of repair parts, spares, modification kits, and consumable items not qualified for bench stocks. Also included are materials used in fabrication to support either a maintenance program or a funded fabrication program (such as sheets, roll, and plate metals; wire; brackets; and so on).

(a) Mission stocks can be consumable or nonconsumable.

(b) Mission stocks are not normally stored in the work area, but are usually stored in a central maintenance storage location, such as an automated storage and retrieval system controlled by the Directorate for Maintenance.

(c) Items included in mission stocks must represent a valid requirement for the performance of a maintenance or fabrication requirement.

(d) A mission stock inventory record will be continuously maintained for all items in maintenance and fabrication mission stock.

(e) Mission stock will be requisitioned from the source of supply not more than 60 days in advance of anticipated depletion or requirement. If it is more economical to purchase and store a larger quantity of fabrication materials, the 60-day level may be exceeded. Availability of materiel remaining from previously completed fabrication orders will be determined before requisitions are placed.

(f) On a semiannual basis, a review will be made of all mission stock (repair parts, spares, and materials) on-hand. Any excess materiel will be returned to ISA, and future procurements will be adjusted accordingly.

(g) Prior to closing a depot maintenance program, the maintenance activity will transfer or turn in all associated remaining mission stock (repair parts, spares, and materials) on-hand. The excess material will either be turned in or transferred to a program with a valid funded program requirement to be initiated within 15 days, an ongoing depot maintenance program, or a fabrication program, provided the following conditions are met:

1. Gaining program is valid, open, and funded.
2. Transferred materiel is a valid requirement of the gaining program.
3. Cost of the transferred materiel is transitioned to the gaining program. However, fabrication materiel in less than quantity of issue and charged to a prior program will not be charged to the gaining program.
4. Materiel is not transferred to an overhead account.
5. Transferred materiel does not exceed the authorized mission stockage level for the gaining program.



## **Appendix A References**

### **Section I Required Publications**

#### **AR 5-9**

Area Support Responsibilities. (Cited in paras 2-16a(23), 2-16d(1), and 7-14g(1)(c).)

#### **AR 58-1**

Management, Acquisition and Use of Motor Vehicles. (Cited in paras 5-36a, 5-36e, 5-37, 7-8c(13), and 7-8c(21).)

#### **AR 70-1**

Army Acquisition Policy. (Cited in paras 2-2d, 2-16a(19), 2-16c(14), 2-17b(19), 3-22s, 3-22t, 6-4a, 6-7a, 7-2b(4)(c), 7-4a(2), and 8-2f.)

#### **AR 73-1**

Test and Evaluation Policy. (Cited in para 6-13b.)

#### **AR 95-1**

Flight Regulations. (Cited in paras 2-16c(16) and 3-2a(7).)

#### **AR 220-1**

Unit Status Reporting. (Cited in paras 3-7b(2), 3-7c(2), 7-4c(1)(c), 7-5, and 7-10k.)

#### **AR 335-15**

Management Information Control System. (Cited in paras 3-18e(5), 3-18f, 3-21e, 7-6g(4)(a), 7-6g(5)(e), and 8-9d.)

#### **AR 385-55**

Prevention of Motor Vehicle Accidents. (Cited in para 6-11j.)

#### **AR 700-4**

Logistics Assistance. (Cited in paras 2-14c and 4-16a.)

#### **AR 700-138**

Army Logistics Readiness and Sustainability. (Cited in paras 2-18e(2), 3-6c, 3-7b(2), 3-7c(2), 3-14d(11), 3-14e, 3-14h(6), 4-9, 5-25b(2)(e)3, 5-25b(2)(f)4, 7-5, 7-6d(2), 7-6e(6), 7-6h(1), and 7-10k.)

#### **AR 700-139**

Army Warranty Program Concepts and Policies. (Cited in paras 2-16a(14), 2-17b(14), 5-49a, 6-10a, and 7-3a.)

#### **AR 710-1**

Centralized Inventory Management of the Army Supply System. (Cited in paras 2-14w, 5-32e, 8-10g, and 8-15a.)

#### **AR 710-2**

Inventory Management Supply Policy Below the Wholesale Level. (Cited in paras 2-16c(4), 3-2a(4), 3-12b, 3-12c(5), 3-16g(5), 4-1g, 4-2d, 4-4a(1), 4-6f, 4-8c, 4-17a, 5-12e, 5-12h, 5-12i, 5-14a, 5-17a(11), 5-25c(4), 5-32e, 5-32f, 5-38a, 5-48a, 5-55b, 5-55d, 7-6g(6)(a), and 7-10k.)

#### **AR 710-3**

Asset and Transaction Reporting System. (Cited in paras 7-10k and 7-15.)

#### **AR 715-9**

Contractors Accompanying The Force. (Cited in paras 3-6f(1), 4-19b(1), and 6-4a(1).)

#### **AR 725-50**

Requisition, Receipt, and Issue System. (Cited in paras 3-7f, 3-12b, 3-12c(4), 3-12d, 5-6b, and 7-11b(6)(e).)

#### **AR 750-6**

Ground Safety Notification System. (Cited in paras 2-16c(16), 3-2a(7), and 7-16b.)

**AR 750-10**

Army Modification Program. (Cited in paras 2-4*q*, 2-15*i*, 2-15*t*, 2-16*c*(22), 3-2*a*(7), 3-6*j*, 3-14*d*(12), 3-15*i*, 3-16*g*(9), 3-22*m*, 4-18*d*, 5-10, 5-18*g*, 7-3*h*, 7-5*f*, and 7-9*f*.)

**AR 750-43**

Army Test, Measurement, and Diagnostic Equipment Program. (Cited in paras 2-16*a*(13), 2-16*c*(11), 2-17*b*(13), 3-6*n*, 3-22*r*, 5-9*a*, 5-17*g*, 5-44*b*, and 6-3*h*.)

**AR 750-59**

Army Corrosion Prevention and Control Program. (Cited in paras 2-14*v*, 2-16*a*(17), 2-17*b*(17), and 7-18*a*.)

**CTA 50-900**

Clothing and Individual Equipment. (Cited in para 5-51*e*(2)(*f*)). (Available at <https://freddie.forscom.army.mil/ocie>.)

**DA Pam 25-35**

Index of Communications Security (COMSEC) Publications. (Cited in para 5-9*c*.)

**DA Pam 710-2-1**

Using Unit Supply System (Manual Procedures). (Cited in paras 4-17*a* and 5-51*a*.)

**DA Pam 710-2-2**

Supply Support Activity Supply System: Manual Procedures. (Cited in paras 4-8*c*, 4-17*a*, and 7-6*g*(6)(*a*).)

**DA Pam 738-750**

Functional Users Manual for The Army Maintenance Management System (TAMMS). (Cited in paras 2-16*c*(12), 3-2*a*(3), 3-2*a*(6), 3-3*a*(1), 3-5*b*, 3-8*a*, 3-14*e*, 3-14*h*(7), 4-6*a*(4), 4-9, 4-13*e*, 5-7, 5-8*a*, 5-11, 5-13*c*, 5-28*c*, 5-42*e*, 6-10*c*, 7-2*c*(5), 7-2*e*, 7-2*f*, 7-2*g*, 7-3*b*, 7-5, 7-9*a*, 7-9*b*, 7-11*b*(7)(*d*), and 7-12*d*.)

**DA Pam 738-751**

Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A). (Cited in paras 2-16*c*(12), 2-18*f*(6), 3-2*a*(3), 3-5*b*, 3-14*e*, 4-6*a*(4), 4-9, 4-13*e*, 5-18*d*(6), 5-18*h*, 5-24, 5-25*d*(1), 5-25*e*(2), 6-10*c*, 7-2*c*(5), 7-3*b*, 7-4*b*(4), 7-5, 7-9*a*, 7-9*b*, and 7-11*b*(7)(*d*)).

**DA Pam 750-13**

Maintenance of Supplies and Equipment-Operating Guide for TDA Support Maintenance Activities. (Cited in paras 2-4*f*, 2-16*a*(11), and 3-17*a*.)

**DA Pam 750-35**

Guide for Motor Pool Operations. (Cited in paras 3-14*e* and 4-11.)

**DOD 4000.25-2-M**

Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP). (Cited in para 7-15*a*.) (Available at <http://www.dtic.mil/whs/directives>.)

**DOD 4151.18-H**

Depot Maintenance Capacity and Utilization Measurement Handbook. (Cited in para 8-9*a*(2)). (Available at <http://www.dtic.mil/whs/directives>.)

**DOD 4500.9-R, Part II**

Management and Control of Intermodal Containers and System 463-L Equipment. (Cited in para 3-10.) (Available at <http://www.dtic.mil/whs/directives>.)

**DOD 5220.22-R**

Industrial Security Regulation. (Cited in para 5-9*d*.) (Available at <http://www.dtic.mil/whs/directives>.)

**DODD 4151.18**

Maintenance of Military Materiel. (Cited in paras 3-22*o*, 7-4*a*(1), and 8-4*a*.) (Available at <http://www.dtic.mil/whs/directives>.)

**DODD 5040.2**

Visual Information (VI). (Cited in para 5-40*b*.) (Available at <http://www.dtic.mil/whs/directives>.)

**DODI 4660.2**

Communications Security (COMSEC) Equipment Maintenance and Maintenance Training. (Cited in paras 5-12*b* and 5-12*c*.) (Available at <http://www.dtic.mil/whs/directives>.)

**EM 0022**

TM 43-TMDE Technical Data Catalog. (Cited in paras 3-22*q*, 5-9*a*, and 5-17*g*.)

**FM 4-30.3**

Maintenance Operations and Procedures. (Cited in paras 4-11, 4-16*d*, 5-4*c*(1), and 5-32.)

**NGB Pam 350-1**

Administrative Instructions. (Cited in para 5-51*e*(1).) (Available at <http://www.ngbpdc.ngb.army.mil>.)

**NGB PAM 570-1**

Fulltime Support Manning for the Army National Guard. (Cited in para 3-19*d*.) (Available at <http://www.ngbpdc.ngb.army.mil>.)

**NGB Pam 750-2**

ARNG Aviation Maintenance Pamphlet. (Cited in paras 3-14*i*, 5-16*b*, and 5-18*b*.) (Available at <http://www.ngbpdc.ngb.army.mil>.)

**NGR 95-1**

ARNG Aviation: Flight Regulations. (Cited in para 3-19*a*.) (Available at <http://www.ngbpdc.ngb.army.mil>.)

**NGR 415-10**

Army National Guard Facilities Construction. (Cited in para 3-19*e*.) (Available at <http://www.ngbpdc.ngb.army.mil>.)

**TB 1-1500-341-01**

Aircraft Components Requiring Maintenance Management and Historical Data Reports. (Cited para 5-25*e*(2).)

**TB 43-180**

Calibration and Repair Requirements for the Maintenance of Army Materiel. (Cited in paras 5-44*b* and 5-46.)

**TB 380-41**

Procedures for Safeguarding, Accounting, and Supply Control of COMSEC Materiel. (Cited in para 5-9*d*.)

**Section II****Related Publications**

A related publication is a source of additional information. The user does not have to read a related reference to understand this publication. The United States Code is available at <http://www.gpoaccess.gov/uscode/index.html>.

**AR 5-1**

Total Army Quality Management

**AR 5-20**

Commercial Activities Program

**AR 10-87**

Major Army Commands in the Continental United States

**AR 12-series**

Security Assistance and International Logistics

**AR 25-1**

Army Information Management

**AR 25-11**  
Record Communications and the Privacy Communications System

**AR 25-12**  
Communications Security Equipment Maintenance and Maintenance Training

**AR 25-30**  
The Army Publishing Program

**AR 37-49**  
Budgeting, Funding, and Reimbursement For Base Operations Support of Army Activities

**AR 40-61**  
Medical Logistics Policies and Procedures

**AR 56-3**  
Management of Army Rail Equipment

**AR 56-9**  
Watercraft

**AR 71-32**  
Force Development and Documentation Consolidated Policies

**AR 130-400**  
Logistical Policies For Support

**AR 190-11**  
Physical Security of Arms, Ammunition and Explosives

**AR 190-13**  
The Army Physical Security Program

**AR 200-1**  
Environmental Protection and Enhancement

**AR 200-2**  
Environmental Effects of Army Actions

**AR 335-15**  
Management Information Control System

**AR 350-1**  
Army Training and Education

**AR 350-38**  
Training Device Policies and Management

**AR 380-40**  
Policy for Safeguarding and Controlling Communications Security (COMSEC) Materiel (U)

**AR 380-67**  
The Department of the Army Personnel Security Program

**AR 381-143**  
Logistic Policies and Procedures (U)

**AR 385-16**  
System Safety Engineering and Management

**AR 420-18**

Facilities Engineering Materials, Equipment, and Relocatable Building Management

**AR 570-4**

Manpower Management

**AR 600-55**

The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing)

**AR 700-18**

Provisioning of U.S. Army Equipment

**AR 700-19**

U.S. Army Munitions Reporting System

**AR 700-68**

Storage and Handling of Liquified and Gaseous Compressed Gases and Their Full and Empty Cylinders

**AR 700-82**

Joint Regulation Governing the Use and Application of Uniform Source Maintenance and Recoverability Codes

**AR 700-84**

Issue and Sale of Personal Clothing

**AR 700-90**

Army Industrial Base Process

**AR 700-127**

Integrated Logistic Support

**AR 700-132**

Joint Oil Analysis Program (JOAP)

**AR 700-142**

Materiel Release, Fielding, and Transfer

**AR 702-7**

Product Quality Deficiency Report Program

**AR 702-7-1**

Reporting of Product Quality Deficiencies Within the U.S. Army

**AR 735-5**

Policies and Procedures for Property Accountability

**DA Pam 25-6**

Configuration Management for Automated Information Systems

**DA Pam 25-30**

Consolidated Index of Army Publications and Blank Forms

**DA Pam 25-91**

Visual Information Procedures

**DA Pam 25-380-2**

Security Procedures for Controlled Cryptographic Items

**DA Pam 351-4**

U.S. Army Formal Schools Catalog

**DA Pam 700–55**

Instructions for Preparing the Integrated Logistic Support Plan

**DA Pam 700–60**

Department of the Army Sets, Kits, Outfits, and Tools (SKOT)

**DA Pam 700–142**

Instructions for Materiel Release, Fielding, and Transfer

**DA Pam 750–1**

Leader's Unit Maintenance Handbook

**DA Pam 750–40**

Guide to Reliability Centered Maintenance (RCM) for Fielded Equipment

**DFAS–IN Regulation 37–1**

Finance and Accounting Policy Implementation. (Available at <http://www.asafm.army.mil/budget/di/di.asp>.)

**DOD 4140.1–R**

DOD Supply Chain Materiel Management Regulation. (Available at <http://www.dtic.mil/whs/directives>.)

**DOD 4151.18–H**

Deopt Maintenance Capacity and Utilization Measurement Handbook. (Available at <http://www.dtic.mil/whs/directives>.)

**EM 0007 FEDLOG (formerly SB 700–20)**

Army Adopted/Other Items Selected For Authorization/ List of Reportable Items. (Available at <http://weblog.logsa.army.mil/index.shtml>.)

**Federal Acquisition Regulation**

(Available at <http://www.arnet.gov/far/>.)

**FM 21–305**

Manual for the Wheeled Vehicle Driver

**HQDA Resource Formulation Guide**

(Available at <http://141.116.39.87>.)

**MIL–HDBK–1221(3)**

Evaluation of Commercial Off-the-Shelf (COTS) Manuals. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**MIL–HDBK–1473A**

Color and Marking of Army Materiel. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**MIL–PRF–5041**

Tires, Ribbed Tread, Pneumatic, Aircraft, General Specifications for. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**MIL–PRF–7726J**

Retread Tires, Ribbed Tread, Pneumatic, Aircraft, General Specifications for. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**MIL–PRF–49506**

Logistics Management Information. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**MIL–STD–882D**

System Safety. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**SAE–J2014**

Pneumatic Tires for Military Tactical Wheeled Vehicles. (Available at <http://assist.daps.dla.mil/quicksearch>.)

**SB 708-43**

Cataloging Handbook H4/H8 Commercial and Government Entity (CAGE)

**SB 710-1-1**

Standard Study Number System and Replacement/Requirements Factors Standard Study Number (SSN) Master File Cross Reference Index

**SOLAS**

International Convention for the Safety of Life at Sea, 1974. (Available at <http://www.imo.org>.)

**TB 9-1300-385**

Munitions Restricted or Suspended

**TB 9-2610-200-34/1**

Pre-Award Inspectors Guide for Retreading and Repairing of Pneumatic Tires

**TB 38-750-2**

Maintenance Management Procedures for Medical Equipment

**TB 43-0002 series**

Maintenance Expenditure Limits

**TB 43-0106**

Aeronautical Equipment Army Oil Analysis Program (AOAP)

**TB 43-0144**

Painting of Watercraft

**TB 43-0242**

CARC Spot Painting

**TB 43-0244**

Unit Level Procedures for Handling Service Supplies, Hazardous Materials and Waste

**TB 55-1900-201-45/1**

Guide to Army Watercraft Survey Inspections, Repair Procedures and Repair Specifications Preparation

**TB 55-1900-205-24**

Watercraft Information and Reporting System (WIRS) Data Collection for Configuration Control

**TB 600-1**

Procedures for Selection, Training, Testing and Qualifying Operators of Equipment/Systems, Excluding Selected Watercraft and Aircraft, Managed/Supported by U.S. Army Troop Support and Aviation Materiel Readiness Command

**TB 750-25**

Maintenance of Supplies and Equipment: Army Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Repair Support (CRS) Program

**TC 21-306**

Tracked Combat Vehicle Driver Training

**Title 46, Code of Federal Regulations**

Shipping. (Available at <http://www.access.gpo.gov/nara/cfr>.)

**TM 1-1500-204-23-1**

Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual for General Aircraft Maintenance (General Maintenance and Practices), Volume 1

**TM 1-1500-328-23**

Aeronautical Equipment Maintenance Management Policies and Procedures

**TM 9-2610-200-14**

Operator's Unit, Direct Support, and General Support Maintenance Manual for Care, Maintenance, Repair, and Inspection of Pneumatic Tires and Inner Tubes

**TM 10-8400-203-23**

General Repair Procedures for Individual Equipment

**TM 38-600**

Management of Administrative Use Motor Vehicles

**TM 55-2620-201-24**

Application Table for Aircraft Tires and Tubes

**TM 55-500**

Watercraft Equipment Characteristics and Data

**RCS DRC 130**

Army Aircraft Inventory, Status and Flying Time

**Section III**

**Prescribed Forms**

**DA Form 5480**

Maintenance Request and Assignment Register. (Prescribed in para 7-14h(24)(a).) A copy of DA Form 5480 is available on the APD Web site (<http://www.usapa.army.mil>).

**Section IV**

**Referenced Forms**

Except where otherwise indicated below, forms are available as follows: DA forms are available on the APD Web site (<http://www.usapa.army.mil>) and DD forms are available at <http://www.dior.whs.mil/ICDHOME/DDEFORMS.HTM>.

**DA Form 1352**

Army Aircraft Inventory, Status, and Flying Time

**DA Form 2028**

Recommended Changes to Publications and Forms

**DA Form 2062**

Hand Receipt/Annex Number

**DA Form 2402**

Exchange Tag

**DA Form 2404**

Equipment Inspection and Maintenance Worksheet

**DA Form 2406**

Materiel Condition Status Report

**DA Form 2407**

Maintenance Request. (Available from normal publication supply channels.)

**DA Form 2408-13**

Aircraft Status Information Record

**DA Form 2408-13-3**

Aircraft Technical Inspection Worksheet

**DA Form 2408-17**

Aircraft Inventory Record



**DA Form 2408-18**

Equipment Inspection List

**DA Form 2410**

Component Removal and Repair/Overhaul Record

**DA Form 2415**

Ammunition Condition Report

**DA Form 3254-R**

Oil Analysis Recommendation and Feedback

**DA Form 3266-1**

Army Missile Materiel Readiness Report

**DA Form 5988-E**

Equipment Inspection and Maintenance Worksheet (generated electronically)

**DA Form 5990-E**

Maintenance Request (generated electronically)

**DA Form 5991-E**

Oil Analysis Request (generated electronically)

**DD Form 314**

Preventive Maintenance Schedule and Record

**DD Form 448**

Military Interdepartmental Purchase Request

**DD Form 1577**

Unserviceable (Condemned) Tag-Materiel. (Available from normal publication supply channels.)

**DD Form 1577-2**

Unserviceable (Repairable) Tag-Materiel. (Available from normal publication supply channels.)

**DD Form 2625**

Controlled Cryptographic Item (CCI) Briefing

**SF 368**

Product Quality Deficiency Report. (Available at <http://www.gsa.gov>.)

## Appendix B Maintenance Performance Measures

### B-1. General

The performance measures discussed in the paragraphs below were developed to assist the support maintenance unit commander and IMMOs in evaluating critical maintenance operations and in ensuring that overall performance meets Army standards. In accordance with paragraph 4-12, the use of manpower utilization rates in the management of maintenance operations is mandatory. All other performance measures are encouraged but optional. The optional performance measures will not be used for inspection purposes.

### B-2. Manpower utilization rates

*a. General.* There are two utilization rates that are used to measure the effective use of maintenance personnel. The assigned utilization rate measures the percentage of direct labor man-hours assigned to the unit/organization that is recorded as total man-hours on all DA Form 2407 and/or DA Form 5990-E in a given period of time. The available manpower utilization rate measures the percentage of all of the direct labor man-hours actually made available to the shop office for work that is recorded as total man-hours on DA Forms 2407 and 5990-E for a given period of time.

(1) Direct labor is defined as time expended in performance of maintenance tasks required by the technical publication. Some maintenance personnel are required, by MOS or job title, to spend more than 50 percent of their productive time in direct labor duties. Other personnel, because of leadership, supervisory, or other requirements, are required to spend less than 50 percent of available time in direct labor duties. The total of all assigned and available direct labor must be considered.

(2) Indirect labor is work that contributes to the completion of work orders but does not include the performance of maintenance tasks required by technical publications.

*b. Assigned manpower utilization rate.* Assigned maintenance personnel includes all civilians, soldiers and contractors whose duties require that they accomplish productive labor. The total of the *possible* direct labor man-hour contribution from all assigned personnel in a selected period of time will be used. The percentage of this *possible* contribution from assigned personnel that are *actually recorded* as total man-hours on DA Form 2407/5990-E during a time period (for example, month, quarter, year) is the assigned manpower utilization rate. Assigned manpower utilization rate = total direct labor man-hours recorded on DA Form 2407/5990-E / total assigned direct labor hours contribution from assigned maintenance personnel.

*c. Assigned direct labor man-hours.* These are routinely reduced by other organizational requirements. Some of these are as follows:

- (1) Military training (non-maintenance skill training).
- (2) Alert duty.
- (3) Organizational duties.
- (4) Flight status.
- (5) Personnel processing.
- (6) TDY.
- (7) Compensatory time off.
- (8) Excused from duty.
- (9) Ordinary leave.
- (10) Sick leave (civilian).
- (11) Medical absence (military).
- (12) Personal affairs.
- (13) Absent without leave (AWOL)/confined.
- (14) Leave without pay.
- (15) Job-related injury.
- (16) Administrative leave.

*d. Available manpower utilization rate.* The total available time will be computed by subtracting organizational requirements identified in *c*, above, and other command-approved diversions of personnel from the total assigned direct labor man-hours described in *b*, above. This provides the net number of man-hours that are available and can be computed for appropriate time periods (monthly, weekly, daily, and so on). The percentage of the total available man-hours that are actually recorded as total man-hours on DA Form 2407/5990-E during a selected time period is the available man-hour utilization rate. Available manpower utilization rate = total direct labor man-hours recorded on DA Form 2407/5990-E / total available direct labor man-hours.

*e. Man-hour utilization rate.* When computing available man-hour utilization rate for National Guard TDA maintenance facilities such as an OMS, CSMS, and so on, subtract the time spent in military status (such as AT, preparation

for IDT performed during the normal work week, attendance at military schools, and other time lost to military training such as physical training) from the available man-hours.

### **B-3. Workload**

Workload is the sum of the estimated man-hours required for work awaiting induction and to complete work in progress. The maintenance workload must be considered in materiel commodity areas (such as armament, aviation, automotive, CE, and so on) and is not normally managed in higher workload aggregations. This management technique parallels the typical organization of maintenance operations into platoons, shops, sections, and similar sub-elements. Higher aggregations of workload statistics for different commodities do not have management significance because maintenance skills, tools, repair parts, and other maintenance resources are often not transferable across commodity lines to reduce high workloads. Established time standards for tasks performed over time on a repetitive basis will result in more-accurate man-hour estimates to be used in workload computations. The task time standards should be reviewed and adjusted at least semiannually to assist commanders in detecting and responding to changes in a maintenance organization's workload.

### **B-4. Direct labor availability**

Direct labor availability is the number of man-hours available per day in a shop or commodity area to perform productive maintenance tasks on work orders. Man-hours expended from this direct labor resource will be recorded in the "man-hours expended" field of the DA Form 2407/5990-E and summarized in the "total man-hours" field of the DA Form 2407/5990E. The direct labor availability will be projected by supervisors and managers for each shop or commodity area to ensure that the maintenance operation can accomplish expected workloads without excessive backlogs.

*a.* The direct labor availability for each shop or commodity area will be computed by using the manpower availability rate from paragraph B-2*d* and applying it to the total daily available hours that are projected for that shop or commodity area for the time period under consideration.

*b.* Direct labor availability is calculated as follows: Direct labor availability=manpower availability rate × total available direct labor hours (per day).

*c.* Rates and available man-hours will vary from unit to unit, shop to shop, and location to location and must be individually determined. All commanders and managers will ensure that these capabilities and rates are computed, updated, and used in the management of maintenance operations.

*d.* Management of the maintenance mission must be locally directed based upon projected workload and projected capabilities and capacities to accomplish that workload. Commanders and managers will take the steps necessary to address various problems that arise. For example, if a review of projected personnel gains and losses 90 days to 180 days out indicates an adverse situation is developing, the following alternatives should be addressed:

- (1) Expediting the personnel replacement process.
- (2) Borrowing personnel from other organizations.
- (3) Using local contract or host-nation support.
- (4) Shifting a portion of the workload to another organization that has excess productive capacity.

### **B-5. Efficiency rate**

*a.* The efficiency rate is a measure of the skill proficiency within the maintenance organization. It is dependent upon establishment and maintenance of a set of task time standards that are representative of maintenance performance under the local situation. Inspectors will use the task time standards to estimate the man-hours required to complete each work order.

*b.* The efficiency rate is the man-hours estimated for a given work order (or the total of estimated man-hours for all work orders completed during a given period of time) divided by the man-hours that were actually expended to accomplish the work order.

*c.* The recommended management objective for the efficiency rate is 80 percent to 100 percent.

*d.* The efficiency rate will be calculated for the unit by including all of the work orders completed during the reporting period. It will be calculated for specific individuals on an "as required" basis to measure skill proficiency and thus identify training requirements.

*e.* The trend of the efficiency rate should be plotted for the previous 12 months. When a declining trend is observed, the following should be considered:

- (1) Review the maintenance task standards for validity.
- (2) Verify the effectiveness of supervision within the shops.
- (3) Review the supported density list to identify new equipment for which MOS training may be required.
- (4) Identify individuals who require additional training in certain skills or on certain equipment.
- (5) Physical layout.
- (6) Tool and TMDE availability.

(7) Amount of lag time spent waiting for tools and parts.

#### **B-6. Backlog**

- a. The backlog will be computed for each commodity maintenance organization or shop. (See para B-3.)
- b. Backlog is the overall measure of the direct labor resources required to complete the workload noted in paragraph B-3. The backlog will be expressed in 8-hour workdays and will be computed as follows:  $\text{backlog (in workdays)} = \text{workload} / \text{average daily direct labor availability}$ .
- c. The standard for backlog should be established at the local level based on the equipment supported and historical experience. The previous 12 months experience should be analyzed for trends. If an unfavorable trend emerges, the components of the backlog formula should be analyzed to identify the probable cause.

#### **B-7. Turnaround time**

- a. Turnaround time is the overall measure of the duration of the maintenance cycle. It gives an indication of the responsiveness of the maintenance organization to its customers. Compute turnaround time by commodity and exclude initial rejects. It covers the period of time from acceptance of a work order to closeout. It does not include time awaiting customer pickup.
- b. Turnaround time will be determined as follows:
  - (1) Identify the number of calendar days between the acceptance date and the closeout for each work order completed during the period.
  - (2) Arrange the work orders in ascending order based upon the number of calendar days.
  - (3) Remove from consideration the 25 percent of the total number of work orders with the highest number of calendar days.
  - (4) Calculate the average of calendar days for the remaining work orders.
- c. The 25 percent of work orders with long times should be the subject of intensive individual attention to resolve their particular problems but should not be allowed to distort the average of turnaround time that is intended to be representative of normal operations.
- d. Turnaround time involves the following three major components: maintenance delay time, supply delay time, and repair cycle time.
  - (1) Although the factors that comprise or influence these components are not always controllable, no corrective actions can be taken until the problems have been identified and traced to the probable cause. Maintenance shop officers are responsible for correcting those factors that they can control and for bringing to the attention of the chain of command those factors beyond their control.
  - (2) Commanders at the local installation level should establish a standard for the turnaround time measure. The trend of the turnaround time and its major components should be plotted for the previous 12 months. When an increasing trend is observed, the major components of turnaround time should be reviewed and analyzed as indicated in the following paragraphs.

#### **B-8. Maintenance delay time**

- a. Maintenance delay time is the component of turnaround time that represents time spent awaiting a required resource other than repair parts—that is, the availability of facility space, tools, TMDE, and skilled personnel. It includes time awaiting initial, in-process, and final inspections and time awaiting induction into the shop.
- b. Maintenance delay time is calculated using the same segment of work orders completed during the period as used to calculate turnaround time. It is determined by calculating the mean number of calendar days that work orders in the segment were carried in status codes indicating awaiting inspection, awaiting shop, or awaiting some action other than receipt of repair parts. It will also be expressed as a percentage of the total turnaround time.
- c. Local commanders should establish a standard for maintenance delay time in terms of its percentage of total turnaround time. When an increasing trend is observed, the following should be reviewed:
  - (1) Availability and use of direct labor personnel.
  - (2) Inspection procedures.
  - (3) The ratio of direct labor personnel to work stations by shop section—balance labor among workstations.
  - (4) The adequacy of the quantity of tools and TMDE.
  - (5) The adequacy of lift and materiel handling equipment.

#### **B-9. Supply delay time**

- a. Supply delay time is the component of turnaround time that represents time lost waiting for receipt of repair parts. It includes only that time when no further maintenance action can be taken due to a lack of repair parts. Time elapsed while repair parts are on order but other maintenance actions are, or could be, taken will not be counted as supply delay time.
- b. Supply delay time is calculated using the turnaround time segment of work orders completed during the period. It is determined by calculating the average number of calendar days that work orders in the segment were carried in

status codes indicating no further action possible while awaiting receipt of repair parts. It is also expressed as a percentage of the total turnaround time.

*c.* The local commander should establish a standard for supply delay time in terms of its percentage of total turnaround time.

*d.* When an increasing trend is observed, the following should be reviewed:

- (1) Requisition priorities.
- (2) Reconciliation procedures.
- (3) Authorized stockage list.
- (4) Supply performance measures, including—
  - (a)* Gross availability or fill rate.
  - (b)* Average customer wait time.
  - (c)* Requisition processing time.
  - (d)* Receipt processing time.

#### **B-10. Repair cycle time**

*a.* Repair cycle time is the component of turnaround time that represents time spent in the shop undergoing inspection, repair, or service. It is the primary component that measures actual maintenance performance rather than detractors to performance as measured by the two delay time components. Repair cycle time is comprised of, or influenced by, several factors that are addressed separately below.

*b.* Because it is the only delay component that is subject to distortion by a small percentage of the total, the repair cycle time will be calculated using all of the work orders completed during the period. It will be determined by calculating the average number of calendar days that the work orders were carried in status codes indicating “in shop.”

*c.* Installation-level commanders should establish standards for total repair cycle time by priority of the work order. When an increasing trend is observed, the factors affecting repair cycle time should be reviewed and analyzed as indicated below.

#### **B-11. Backup support utilization**

*a.* Backup support utilization is a measure of the extent of workload transferred to an organization charged with the responsibility of absorbing overflow workload.

*b.* Backup support utilization is a percentage calculated by dividing the number of man-hours estimated for all work orders accepted into the maintenance activity during the period into the number of man-hours estimated for work orders evacuated to backup support during the same period.

*c.* The installation commander should establish the standard for backup support utilization. The installation commander should consider the unit’s capacity as stated in its MTOE. When an increasing trend is observed, the following items should be reviewed:

- (1) The trend of workload acceptance to identify an increase in work coming in from supported units.
- (2) The supported density lists to identify additional quantities supported.
- (3) Direct labor availability to identify a decrease in labor capacity.
- (4) Direct labor utilization rate to identify a decrease in effective use of personnel resources.

#### **B-12. Maintenance float utilization**

*a.* Maintenance float transaction time—

(1) Measures a factor that impacts upon repair cycle time and the efficiency of the maintenance float decision process.

(2) Is determined by calculating for the previous 12 months an average of the number of calendar days between the acceptance of the work order into the support maintenance activity and the customer receipt of the float.

*b.* The local installation commander should establish the standard for maintenance float transaction time. When an increasing trend is observed, the following items should be reviewed:

- (1) The float decision process, to ensure that the decision to float is made as early as possible.
- (2) The availability of float assets, to identify underused items or shortages.
- (3) The demand recording process, to ensure that demands are being captured.
- (4) The priority placed on work orders to repair float assets, to ensure that it matches the highest priority of supported units authorized these items.

#### **B-13. Float utilization**

Float utilization is computed as the number of work orders closed out using float divided by the total number of work orders less initial rejections. If you are not using the float, this factor will be low and should trigger management action to evaluate if equipment maintained as float should be retained.

## **B-14. Rejection rate**

*a.* The rejection rate is the number of items being reprocessed into the shop for rework. This includes in-shop and final inspection rejections and customer rejections and returns for correction of the same problem within 30 days after close-out of the work order.

*b.* The local commander should establish the rejection rate standard.

*c.* If the in-shop rejection rate exceeds the standard, the shop officer should—

- (1) Validate the inspection.
- (2) Determine adequacy of leadership and supervision within the shops.
- (3) Determine if procedures are correct. If not, submit recommended changes to TMs.
- (4) Determine if new equipment or basic skills training is required.
- (5) Determine if facilities are adequate.

*d.* If customer rejection or return rates exceed the standard, the shop officer should—

- (1) Validate the inspection standards and skills.
- (2) Determine if additional new equipment or basic skills training is required.
- (3) Determine if repeated faults are a result of improper operation or unit maintenance.
- (4) Determine if customer relations are the cause of the increased rejection rate.

## **Appendix C**

### **Determination of Tactical Maintenance Augmentation Requirements for Military Mechanics During Peacetime Garrison Operations**

#### **C-1. Required documents**

*a.* There are two Army MARC maintenance databases (AMMDB): use only the one for Direct Labor. This shows the maintenance military occupational specialties (MOSs) and the man-hours required annually to perform the scheduled and unscheduled maintenance tasks for each equipment item. These man-hour summaries are categorized by equipment LIN.

*b.* Data sources that show the MOSs and numbers of soldiers authorized in a unit/organization (TOE and MTOE).

*c.* Data sources that show the number of equipment items on hand in a unit/organization identified by LIN category.

*d.* Army total asset visibility.

(1) REQVAL.

(2) SPBS-R.

*e.* AR 570-4, which outlines Army policy for computing annual man-hours available (CONUS and OCONUS) in peacetime for soldier maintenance personnel. These numbers are called the peacetime mission availability factors (PMAF).

*f.* A document that reflects the man-hours and costs of a contract man-year for the MOSs to be augmented. The government contracting office that services the MACOM or the location under consideration should provide this document.

#### **C-2. Procedures**

*a.* Determine the on-hand equipment numbers and LIN categories by using the authorization document that is applicable for your unit/organization.

*b.* Determine the number of maintenance man-hours required for each equipment item within a LIN category in your unit/organization authorization document by using the AMMDB. Find the applicable LIN in the AMMDB. From the UNIT column, note the MOS and the number of man-hours required to maintain that LIN item. An example follows.

(1) Mission: Determine the number of man-hours (and funds) required to augment 63B mechanics in a unit motor pool to support the HMMWV.

(2) The AMMDB reveals that MOS 63B maintains the HMMWV, LIN T61494. It also reveals that 167.9 man-hours are required annually to accomplish all scheduled and unscheduled maintenance tasks on each HMMWV.

(3) You have 30 HMMWVs in your unit/organization. Multiply the number 30 by 167.9 for an annual requirement of 5,037 maintenance man-hours.

(4) Use the authorization document that shows the number of maintenance personnel you are authorized. You find authorizations for two soldiers of MOS 63B in the document. Multiply the number of authorized mechanics, two each, times the appropriate PMAF noted in paragraph C-1*e*. In this example, it is the assigned category of mechanical maintenance in CONUS/FORSCOM. Therefore, the PMAF is 1,392 man-hours per year per soldier. The total number of man-hours expected to be available annually, in peacetime, from the two authorized positions is 2,784 hours.

(5) Subtract your peacetime available man-hours (2,784), ((4), above) from your required man-hours (5,037), ((3), above). You find a shortfall of 2,253 man-hours.

(6) Divide the shortfall (2,253) by the contract man-year work hours obtained from the document in paragraph C-1f. The desired number in this example is 1,927, a contract man-year in FORSCOM in year 2000. These results, 2,253 divided by 1,927, represent a shortfall of 1.2 man-years. Then, multiply 1.2 man-years by the contract man-year cost figure for the MOS and area under consideration from paragraph C-1f. In this example, FORSCOM in year 2000, the man-year cost for a contract light wheeled vehicle mechanic was \$52,029.00. Therefore, a total of \$62,434.80 is required to meet the annual augmentation requirement in this example.

(7) Repeat steps (1) through (6), above, for the complete equipment density list and the MOSs in your command.

## **Appendix D Army Maintenance Awards**

### **D-1. Introduction**

This appendix provides instructions and guidance for the preparation of the AAME nomination packet. Units are to use this format in order to ensure all elements of the competition are addressed. MACOMs will work with and mentor their units in an effort to improve the competitiveness of their units.

### **D-2. Competition**

The components for competition remain Active MTOE, National Guard MTOE, Reserve Component MTOE and TDA. Within each component, there are three categories of competition based on the number of authorized personnel in the competing unit. These size categories are small (1-100 personnel), medium (101-300 personnel) and large (301 or more personnel). MACOMs may nominate the number of units authorized in this regulation.

### **D-3. Nomination**

The nomination packet will be prepared in the narrative format prescribed in this appendix and submitted in a 1-inch three-ring binder. Units should also include an electronic version (CD-ROM or Zip) of the nomination packet, preferably in Microsoft Word or Power Point format. The outside of the front cover of the binder is to be labeled with the following information: category of competition, unit designation, location, MACOM, MTOE/TDA number, force activity designator (FAD), complete mailing address (including building number), zip code or Army post office, message address, DSN and/or commercial telephone number, and e-mail address of the POC. Units are authorized to include a unit picture on the front cover with the information required above.

### **D-4. Nomination packet**

Nomination packet submissions should be unclassified. Essential classified information (up to secret) may be submitted; however, it must be marked and submitted separately by forwarding in accordance with information security guidelines. If a classified packet is submitted, the MACOM nominating the unit must notify the USAOC&S (ATSL-AAME) by telephone or fax not less than 3 days before mailing the packet. Any portion of the unit's name, mission, location, or packet that is not releasable for publicity should be specified to USAOC&S (ATSL-AAME).

### **D-5. Nomination address**

Nomination packets are to be forwarded by registered mail to the Commander, U.S. Army Ordnance Center and School, ATTN: ATSL-AAME, Aberdeen Proving Ground, MD 21005-5201.

### **D-6. Sample**

A sample table of contents is provided in figure D-1 and is recommended for unit's use.

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Army Award for Maintenance Excellence  
Nomination Packet

Table of Contents

Section 1-Administrative	Tab A
Basic Unit Information	
Endorsements	
Section 2- Summary of Actions	Tab B
Part A- Mission Accomplishments	
Part B- Effective Use of Maintenance Resources	
Part C- Innovative Management Accomplishments	
Part D- Personnel Quality of Life Programs	
Section 3- Proposed Citation	Tab C
Section 4- Enclosures	Tab D

List page numbers under tabs.

**Figure D-1. Sample table of contents for Army Award for Maintenance Excellence nomination packet**

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### **D-7. Basic unit information (1-2 pages)**

Basic unit information to be provided in section 1 of the AAME nomination packet—and the format to be used—is outlined in table D-1.

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**Table D-1**  
**Basic unit information in section one of the AAME nomination packet**

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- a. Service (Army) and Component (Active, USAR, ARNG).
  - b. Specific unit designation of nominated unit.
  - c. Category/size of nominated unit.
  - d. Point of contact at nominated units.
  - e. MACOM point of contact.
  - f. Complete mailing address of nominated units.
  - g. Complete message addresses.
  - h. Background information for nominated unit.
    1. Unit size (officers enlisted).
    2. Unit location.
  - i. Unit mission statement (five lines or less).
  - j. Operational chronology (during fiscal year).
  - k. Chain of command endorsements (not included in page count).
- 

### **D-8. Summary of actions**

All parts of section 2 of the AAME nomination packet will be assessed and must be addressed within the narrative in accordance with the prescribed format, below:

*a. Mission accomplishments.* A four- to six-page narrative description of the competing unit's mission accomplishments for the competition period. Accomplishments should stress maintenance efforts and the impacts of those efforts on the unit's operational capability and mission accomplishment. Items that must be included are:

(1) *Accomplishment of unit mission requirements.* Discuss in detail the mission-essential tasks the unit must perform and indicate the impact of maintenance operations on the accomplishment of the mission. Address how the unit's use



of maintenance operations impacted overall mission success at training exercises. Consider, for example, including the number of services, recovery missions, and so on, completed while supporting contingency operations, deployment missions, or other operations.

(2) *Weapon system or equipment operational readiness status.* Discuss the level of readiness your unit maintained over the fiscal year and how this relates to your mission readiness. Briefly describe the results of command inspections and evaluations (for example, local maintenance evaluation team (MET), annual training evaluations, rollout exercises, alerts, and similar exercises).

(3) *Operational deployment participation and successes.* Identify all deployment participations during the year of competition. Discuss the unit's success in each of the deployments. Also address how the level of readiness your unit maintained impacted on deployments and EXEVALS. Consider providing the number of successfully completed emergency deployment readiness exercises or operational readiness surveys and number of range qualifications.

(4) *Local or higher headquarters exercise participation and successes.* Discuss maintenance support to various operations throughout the competition period. Examples may include interagency support to other Services and government agencies; support to local academic institutions; and deployed equipment (state quantity) during FTXs, command post exercises (annotate locations), and combat training center (CTC) exercises.

(5) *Special programs.* Discuss projects the unit implemented during the competition period that enhanced maintenance operations. Consider projects that reduce order ship time or repair cycle time. Address smart, participation in the Automotive Standards of Excellence certification program, overseas deployment training, number of urgent MWOs completed, routine MWOs completed, number of safety of use messages received and corrective steps taken, and so on.

*b. Effective use of maintenance resources.* A four- to six-page narrative description of the competing unit's accomplishments that illustrate good stewardship of maintenance resources.

(1) *Maintenance management status.* Focus on key processes and components necessary for an effective maintenance program and how they are monitored, managed, and improved to support maintenance excellence. Address SOPs, management of classes of supply, tool control, TMDE, AOAP, publications, quality assurance, manpower utilization, and HAZMAT management (explain pollution prevention initiatives, hazardous communication program, compliance with HAZMAT transportation regulations, and waste-management procedures).

(2) *Maintenance training programs status.* Focus on how the unit evaluates maintenance skills and training needs and the programs used to provide and improve these skills. Address monthly training schedules, driver training, MOS cross training, professional development training, and how lessons learned from FTX are incorporated into the training program to improve performance.

*c. Innovative management accomplishments.* A two- to three-page narrative that focuses on how the unit innovations impacted mission accomplishment and enhanced operational capability for the commander.

(1) *Equipment improvement recommendations that result in an improved readiness posture.* Consider impact of command emphasis on maintenance programs, maintenance support team (MST) training, and low-density equipment readiness programs. If applicable, include steps taken by your unit to correct systemic maintenance problems with particular pieces of materiel (explain the problem and steps taken to alleviate).

(2) *Resource management innovations and improvements.* Consider rebuild programs and cost-avoidance programs as well as outsourcing and other management initiatives to enhance constrained resources.

(3) *Safety programs.* Discuss unit-/command-level safety programs and inspection results. Address efforts to prevent damage to equipment/personnel injuries and to ensure compliance with local, State, and Federal regulations.

(4) *Training programs.* Address innovative strategies (for example, distance learning or training with industry to enhance technical and professional development of personnel).

(5) *Production quality control innovations and improvements.* Address programs to facilitate quality assurance of maintenance operations. Consider special training programs for quality assurance personnel available from LARs, RTSM, and so on; local software programs developed to enhance maintenance/supply management; and other techniques developed to make the process more efficient and effective.

*d. Personnel quality of life programs.* A two- to three-page narrative that focuses on—

(1) *Self-help programs.* Consider building projects to support the health and welfare of the organization and sponsorship/partnership programs.

(2) *Personnel recognition programs.* Describe the unit's awards and recognition program (for example, mechanic's badges, driver's badges, and so on). Include number of soldiers receiving awards and how the awards related to the effectiveness of the unit's maintenance program.

(3) *Community projects.* Describe involvement with the local community. Consider support to local school systems, community organizations (such as the Boy Scouts), recycling programs, and environmental awareness programs.

(4) *Communications program.* Address use of newsletters and other media to communicate with soldiers, their families and community. Include any articles that focus on the unit's maintenance operations. Describe the use of family support groups and the way you communicate with deployed soldiers.

(5) *Humanitarian projects and programs.* Describe involvement in the following types of projects/programs: disaster

relief missions, meals on wheels, adopt-a-school, blood drives, and so on. Include a concise, double-spaced, unclassified proposed citation highlighting specific achievements.

#### **D-9. Milestones**

Milestones for units submitting nominations:

- a.* 15 Dec: MACOMs forward nominations to USAOC&S.
- b.* 7-18 Jan: Phase 1 Board meets to evaluate nominations.
- c.* 18 Feb-22 Mar: Phase 2 on-site evaluation.
- d.* 29 Mar: Announce AAME winners and runners-up.
- e.* 30 Mar: DA Board meets to select nominees to DOD Maintenance Awards Program.
- f.* 15 May: DA submits six winners of AAME to DOD Maintenance Awards Program.
- g.* 17 Jul: AAME awards ceremony, Washington, DC.

#### **D-10. Request MACOM assistance**

Request MACOM assistance with widest dissemination of these changes. Be advised that details of the AAME program can be found on the DCS, G-4 and USAOC&S home pages. As a reminder, the AAME is a Chief of Staff, Army-level award and results in the best units/organizations being forwarded to compete in the Secretary of Defense Maintenance Awards Program. The Secretary of Defense, the Chief of Staff of the Army, and the DCS, G-4 believe this awards program improves combat readiness in addition to being great for our soldiers. All solicit your assistance in increasing participation in the AAME program.

## Appendix E Command and Depot Codes

### E-1. Command/MSC codes

- a. BY: IOC—U.S. Army Industrial Operations Command.
- b. DI: AMCOM—U.S. Army Aviation and Missile Command—Missile.
- c. EJ: AMCOM—U.S. Army Aviation and Missile Command—Aviation.
- d. EH: TACOM—U.S. Army Tank, Automotive and Armament Command—Warren, MI.
- e. MI: TACOM—U.S. Army Tank, Automotive and Armament Command—Army Chemical Acquisition Logistics Activity.
- f. 1G: CECOM—U.S. Army Communications-Electronics Command.

### E-2. Depot codes Army

- a. H3: Anniston Army Depot, Anniston, AL.
- b. J3: Corpus Christi Army Depot, Corpus Christi, TX.
- c. HP: Letterkenny Army Depot, Chambersburg, PA.
- d. I8: Red River Army Depot, Texarkana, TX.
- e. IP: Tobyhanna Army Depot, Tobyhanna, PA.
- f. M5: Rock Island Arsenal, Rock Island, IL.
- g. M7: Watervliet Arsenal, Albany, NY.
- h. JD: Sierra Army Depot, Hawthorne, NV.
- i. II: Seneca Army Depot, Romulus, NY.
- j. FJ: Pine Bluff Arsenal, Pine Bluff, AK.
- k. I4: Pueblo Depot Activity, Pueblo, CO.
- l. IF: Savannah Depot Activity, Savannah, GA.

### E-3. Navy codes

- a. DA: Naval Air Rework, N. Isl., CA.
- b. DK: Naval Air Rework, Pensacola, FL.
- c. DL: Naval Air Rework, Cherry Point, NC.
- d. S7: Norfolk Shipyard, Norfolk, VA.
- e. T4: Naval Air Rework, Alameda, CA.
- f. T8: Naval Weapons Center, Crane, IN.
- g. 6h: Naval Shipyard, Long Beach, CA.

### E-4. Air Force codes

- a. UJ: Ogden Air LOG, UT.
- b. UK: Oklahoma Air LOG, OK.
- c. UN: Sacramento Air LOG, CA.
- d. UO: San Antonio Air LOG, TX.
- e. UT: Warner Robbins Air LOG, GA.
- f. VY: Newark AFB, OH.
- g. WK: Kirtland AFB, NM.
- h. XQ: Air Defense Center, El Paso, TX.

### E-5. Marine Corps codes

- a. 6N: USMC LOG, Albany, GA.
- b. O: Barstow, CA.

### E-6. Other codes

8L: DSAFE—Korea (This office manages Far East-contracted maintenance.)

### E-7. Database record structure

Table E-1 describes the database record structure.

**Table E-1**  
**Database record structure**

Field	Description	Type	Width
MAJOR-GRP	Major Group/Commodity	Character	1
EQUIP-CAT	Equipment Category	Character	1
TYPE	Type Reportable Item	Character	1
NSN	National Stock Number	Character	13
MDEP	MDEP	Character	4
SSN	Standard Study Number	Character	8
WPN-SYS	Weapon System	Character	3
EI-NOMEN	SSN Nomenclature	Character	19
EI-RANK <sup>1</sup>	End Item Rank	Character	4
NOMEN-AMS	AMDF NSN Nomenclature	Character	30
SI-RANK <sup>2</sup>	Priority Item Rank	Character	4
WAC	Work Accomplishment Code	Character	2
MI	Modification Indicator	Character	1
METHOD	Organic/Contract	Character	1
DEPOT	Depot Code	Character	2
CMD-CD	Command Code	Character	2
RCD-ID	Record Indicator	Character	1
CUST-CD	Customer Code	Character	2
MAJ-SEC	Major or Secondary	Character	1
CUR-UMHRS	Current Unit Manhours	Numeric	10
OY-UMHRS	Out Year Unit Manhours	Numeric	10
QTYF00-08	Funded Quantity	Numeric	7
QTYU00-08	Unfunded Quantity	Numeric	7
DOLF00-08	Funded Dollar Value	Numeric	11
DOLU00-08	Unfunded Dollar Value	Numeric	11
FIA-CD	Code	Character	5
NOMEN-FIA	FIA Nomenclature	Character	19
REMARKS	Remarks/Defer Memo	Character	25

Notes:

<sup>1</sup> This field is left blank.

<sup>2</sup> The priority is to be assigned based on the approved ODCS, G-3 prioritization matrix (see para 8-10d).

## E-8. Type of equipment codes

Table E-2 lists the types of equipment codes.

**Table E-2**  
**Type of equipment codes**

Major group	Type reportable item	Equipment category code
Aircraft=A	A: Basic Airframe B: Engines C: Components D: Comm/Electronics E: Weapons Armament F: Ground Support G: Missiles	1: Fighter 2: Bomber 3: Cargo/Transpt 4: Trainer 5: Utility
Automotive=B	A: Basic Vehicle B: Engines C: Components D: Comm/Electronics E: Weapons Armament F: Support	1: Tactical 2: Support 3: Administrative
Combat Vehicle=C	A: Basic Vehicle B: Engines C: Components D: Comm/Electronics E: Fire Control/Armament F: Support	1: Tanks 2: APCs 3: S/P Artillery 4: Other
Construction=D	A: Basic Vehicle B: Engines C: Components	1: Trac/Earth Mvr 2: Cranes/Shovels

**Table E-2**  
**Type of equipment codes—Continued**

Major group	Type reportable item	Equipment category code
Comm/Electr=E	A: Basic Equipment B: Components	1: Radio 2: Radar 3: Wire 4: Other
Missiles=F	A: Basic Missile B: Propulsion System C: Components D: Launcher E: Guidance System F: Grd Comm Cont System G: Payload System	1: Ballistic 2: Other
Watercraft=G	A: Basic Vessel B: Propulsion System C: Electric Plant D: Comm/Cont E: Auxiliary Systems F: Outfit Furnishings G: Other Components	1: Patrol 2: Aux/Amphibian 3: Service/Mac
Munitions=H	A: Basic Munitions B: Components	1: Nuclear 2: CER 3: Conventional
Weapons=I	A: Basic Weapon B: Components	1: Small Arms 2: Artlry/Guns 3: Other Ord
Rail=J	A: Basic Equipment B: Components	1: Locomotives 2: Rolling Stock
General Equip=K	A: Basic Equipment B: Engines C: Components	1: Generators 2: Matl Handl Equip 3: Bridging Equip 4: Printg/Repro 5: Surv/Dist/Mea 6: Pmp/Tnk/Trtmt 7: Shop Sets 8: Other
Commodity Grp=L	A: Basic Equipment B: Components	1: Test/Meas 2: Other
All Groups	J: Test/Measurement/Diagnostic Equipment K: BII/BILI (identify Major Group) L: Plant Equipment (identify Major Group and Equipment Category)	

**E-9. Management Decision Package (MDEP) codes**

- a. AMAE: Aircraft systems, to include all avionics, assemblies, and subassemblies.
- b. AMME: Missile systems, to include all assemblies and subassemblies.
- c. AMWE: Combat vehicle systems, to include all assemblies and subassemblies.
- d. AMTE: All other weapon systems and end items of equipment to include, but not be limited to, watercraft, ground communications-electronics equipment, small arms, munitions, and engineering equipment.
- e. AMLC: Postproduction software support for the embedded operational software of all weapon systems after management responsibility has transitioned from the materiel developer to AMC.
- f. Provides a cross reference of systems to MDEP.

**E-10. Work accomplishment codes (WACs)**

- a. A1: cyclic/normal overhaul/rebuild.
- b. A2: battle/crash damage overhaul/rebuild.
- c. BO: progressive maintenance.
- d. C1: conversion not in conjunction with overhaul/repair.
- e. C2: conversion in conjunction with overhaul/repair.
- f. DO: activation.
- g. EO: inactivation.

- h. FO: renovation.
- i. GO: analytical rework.
- j. HI: modification not in conjunction with overhaul/repair.
- k. H2: modification in conjunction with overhaul/repair.
- l. IO: repair.
- m. J1: inspect & test (excluding calibration).
- n. J2: inspect & test (including calibration).
- o. J3: inspect & test calibration preshop for reliability centered maintenance at depot level.
- p. KO: fabricate/manufacture.
- q. LO: reclamation/disassembly.
- r. MO: maintenance assistance.
- s. NO: BII replacement (must identify major group).
- t. TO: plant equipment (must identify major group equipment category).
- u. X1: cancellation/reduction cost.
- v. ZI: software maintenance.

#### **E-11. Method codes**

- a. A: organic, IOC.
- b. C: contract.
- c. X: organic, Navy.
- d. Y: organic, Air Force.
- e. Z: organic, Marine Corps.

## **Appendix F DOD Core Methodology**

### **F-1. General**

This appendix contains instructions, by block number, for completing the core determination process. Figure F-1 is a detailed process flow chart for the core requirements determination process.

### **F-2. Instructions for calculating DOD core requirements**

a. *Block A-1: JCS Scenario Input.* The determination of the total DOD organic depot-level capability will be based on the JCS combat contingency scenario(s) and defense planning guidance. Each Service's required organic capabilities, expressed in direct labor hours (DLHs), may vary according to their respective roles in support of the JCS scenario(s).

b. *Block A-2: Platform Required to Support Scenario.* Each Service will determine the specific platform (for example, Abrams A-1 tank, F-1, F-15) required to support the selected JCS scenario. If the platform is required, quantify and compare the scenario requirements with the respective total active inventories to identify any inadequacies. If the platform quantity is not available, equal to the JCS requirement, go to block B-1 (Quantify Total Peacetime DLHs in support of JCS Scenario) and enter the amount greater than the JCS requirement in block G (Adjust for Economy/Efficiency). If the platform is not required, go to block G (Adjust for Economy/Efficiency).

c. *Block B-1: Quantify Total Peacetime DLHs in Support of JCS Scenario.* Determine the peacetime DLHs for those platforms necessary to support the JCS scenario. This is accomplished by dividing the JCS scenario platform requirements by the occurrence factor (for example, number of years between return to depot) multiplied by the platform work package/norm (based on the roles of that platform in support of the JCS scenario).

d. *Block B-2: Workload Adjustment.* Adjust workload for experience and scenario driven factors. Develop scenario workload experience for those quantities passed from block B-1 (Quantify Total Peacetime DLHs in Support of JCS Scenario). Use either a composite, weighted average or platform specific factor to consider readiness, sustainability, and/or return to peacetime readiness in these calculations. Specific workload factors will be determined by compiling available information from scenario models (which include factors for platform OPTEMPO, attrition, and so on), occurrence factors, historical factors (for example, DESERT SHIELD/DESERT STORM), and other scenario-driven factors.

e. *Block C: Estimate Scenario Workload.* Estimate workload based on readiness/sustainability requirements. Using the information from block B-2 (Workload Adjustment), determine the scenario-related workload in DLHs.

f. *Block D: Trade Skill Breakdown.* Determine depot skills required. Using block C (Estimate Scenario Workload) as a basis, identify the depot-level capabilities by skill required to support the scenario-driven platforms and associated workload. This breakdown is not part of the numerical calculations.

g. *Block E: Resource Adjustment.* Adjust for depot surge capacity by applying a Service-derived value to block C (Estimate Scenario Workload) to reduce the scenario workload to peacetime staffing required DLHs. This adjustment should reflect the ability of the depot workforce to surge through the use of overtime and additional work days to meet emergent requirements.

h. *Block F-1: Quantify DLH as Maintenance Hardware Requirements.* Divide the quantity DLHs from block E (Resource Adjustment) by the platform work packages/norms to establish the maintenance hardware requirements.

i. *Block F-2: Assessment of Private Capability.* If the capability associated with a specific maintenance hardware requirement is needed to support the Service Secretary's organic industrial base required for readiness and control, go to block F-3 (Basic Core). If not, conduct a risk assessment to determine whether maintenance sources exist in the private sector to support the platform/hardware requirement. This assessment will consider criteria such as: (1) do private sources exist that are economical and possess the maintenance capability and capacity to do the work, and (2) have private sources demonstrated proven past performance? As a minimum, the criteria listed in *m* through *r*, below, will be used. If the assessment determines that the private sector can provide the required capability with acceptable risk, reliability, and efficiency, then go to block I-1 (Best Value Analysis). If not, then go to block F-3 (Basic Core).

j. *Block F-3: Basic Core.* Compute Basic Core by subtracting the value of the requirements routed to block I-1 (Best Value Analysis) as a result of the risk assessment performed in block F-2 (Assessment of Private Capabilities) from the total requirements reflected in block E (Resource Adjustment).

k. *Block G: Adjustment for Economy/Efficiency.* Ensure that the required minimum core support is not exorbitantly and prohibitively expensive by examining capability utilization and applying efficiency factors to optimize throughput and effectively use available personnel. These economy efficiency adjustments must be constrained by the number of personnel required to accomplish requirements identified in block F-3 (Basic Core). Examine the maintenance requirements for the platform types passed from block A-2 (Platform Required to Support Scenario) for potential augmentation of like platforms/commodities or to improve economies of scale. If needed, go to block H (Peacetime Core). If not needed, go to block I-1 (Best Value Analysis).

l. *Block H: Peacetime Core.* Enter the sum of block F-3 (Basic Core) and block G (Adjust for Economy/Efficiency).

m. *Block I-1: Best Value Analysis.* Business case analysis and/or formal competition (including public/private competition) will normally be used to determine best value. If private, go to block I-2 (Private). If organic, go to block I-3 (Last Source/Non-Core Requirements).

n. *Block I-2: Private Sector.* Enter total requirements for those platforms passed from block I-1 (Best Value Analysis) for support by the private sector (contracted out).

o. *Block I-3: Best Value/Last Source Non-Core Requirements.* Enter requirements passed from block I-1 (Best Value Analysis) for support by an organic source and any additional adjustments required by policy or law (for example, adjustments necessary to satisfy 10 USC 2466 "50/50" requirements).

p. *Block J: Total Organic Capability Requirement.* Enter the sum of block H (Peacetime Core) plus block I-3 (Best Value/Last Source Non-Core Requirements) to determine annual organic workload consistent with JCS scenario requirements, expressed in DLHs.

q. *Minimum Risk Assessment Criteria (block F-2).*

(1) *Number of commercial sources.* How many potential commercial sources are there for this system/item? The higher the number of potential commercial sources, the lower the risk of placing the workload in the commercial sector.

(2) *Capability.* Do the potential commercial sources have the types of facilities, equipment, and skills as well as access to technical data needed to perform this workload? The higher the presence of existing capability in the commercial sector, the lower the risk of placing the workload in the commercial sector.

(3) *Capacity.* Does each of the potential commercial sources have the ability to accomplish the projected quantity of workload? The greater the number of commercial sources with adequate capacity, the lower the risk of placing the workload in the commercial sector.

(4) *Remaining DOD organic capability.* Is there an adequate skill and technology base remaining in DOD to provide maintenance necessary for contingency requirements if the contractor defaults? The more substantial the remaining DOD organic capability, the lower the risk of placing the workload in the commercial sector.

(5) *Surge rate.* How much does the maintenance requirement of this item increase in the event of a contingency? The lower the rate of increase, the lower the risk of placing the workload in the commercial sector.

(6) *Ratio of MRC requirements to inventory.* What is the ratio of the number of units required to support the JCS MRC contingency scenario to the total inventory? The lower the ratio, the lower the risk of placing the workload in the commercial sector.

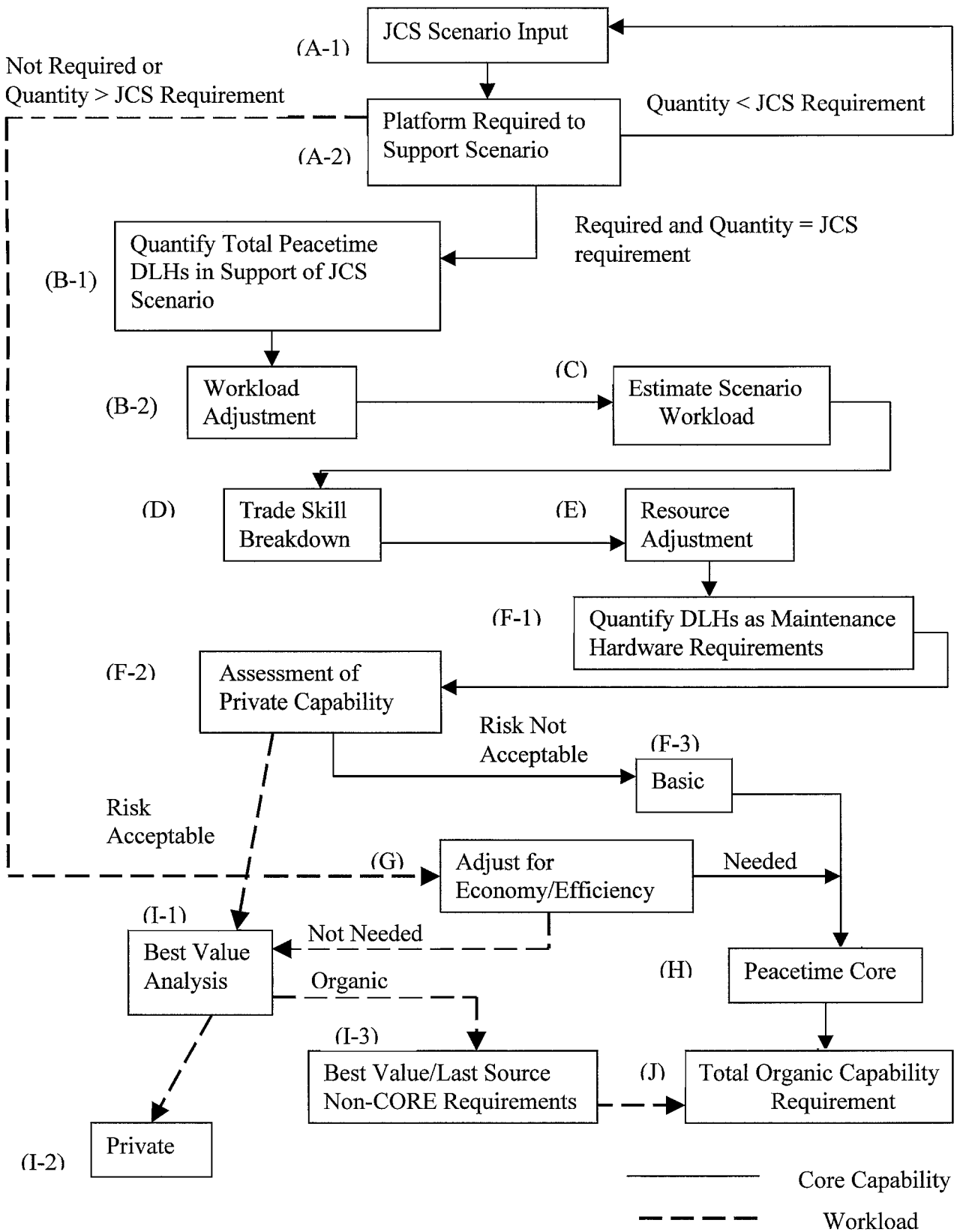


Figure F-1. Flow chart for core requirements determination process



## **Appendix G Management Control Evaluation Checklists**

### **Section I**

#### **Army Oil Analysis Program (Division ADCS/MACOM G-4)**

##### **G-1. Function**

The function covered by this checklist is the Army Oil Analysis Program (AOAP).

##### **G-2. Purpose**

The purpose of this checklist is to assist the Division ADCS/MACOM G-4 in evaluating the key management controls listed below. It is not intended to cover all controls.

##### **G-3. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

##### **G-4. Test questions**

See paragraph 7-2.

- a.* Have AOAP monitors at each level of command been assigned and properly trained by the supporting laboratory or installation AOAP monitor?
- b.* Are AOAP laboratory operations adequately funded?
- c.* Are commanders actively participating in the AOAP?
- d.* Is feedback being sent to laboratories by users?
- e.* Are supported units properly responding to laboratory recommendations?

##### **G-5. Supersession**

This checklist supersedes the previously published checklist(s) for the Army Oil Analysis Program.

##### **G-6. Comments**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

### **Section II**

#### **Army Oil Analysis Program (DCS, G-4 (AMC))**

##### **G-7. Function**

The function covered by this checklist is the Army Oil Analysis Program.

##### **G-8. Purpose**

The purpose of this checklist is to assist the DCS, G-4 (AMC) in evaluating the key management controls listed below. It is not intended to cover all controls.

##### **G-9. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

##### **G-10. Test questions**

See paragraph 7-2.

- a.* Is required laboratory equipment being funded and procured?
- b.* Are laboratory equipment and personnel properly certified?

- c. Are weapon systems being included in and configured for the AOAP when required?

#### **G-11. Supersession**

This checklist replaces the previously published checklist(s) for the Army Oil Analysis Program.

#### **G-12. Comments**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

### **Section III**

#### **Equipment maintenance**

#### **G-13. Function**

The function covered by this checklist is equipment maintenance.

#### **G-14. Purpose**

The purpose of this checklist is to assist the Division ADCS/MACOM G-4 in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-15. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-16. Test questions**

- a. Is the importance of maintenance being emphasized at all levels?
- b. Are subordinates held accountable for proper maintenance operations?
- c. Is equipment being maintained to the Army maintenance standard?

#### **G-17. Supersession**

This checklist replaces the previously published checklist(s) for equipment maintenance.

#### **G-18. Comments**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

### **Section IV**

#### **Maintenance Expenditure Limits**

#### **G-19. Function**

The function covered by this checklist is maintenance expenditure limits.

#### **G-20. Purpose**

The purpose of this checklist is to assist the Division ADCS/MACOM G-4 in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-21. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-22. Test questions**

See paragraph 4-5.

- a. Are DS, GS, depot, and IMMAs using maintenance expenditure limits to determine if excess and accident-damaged equipment is economically repairable?
- b. Are conditions for waivers of published maintenance expenditure limits being met?
- c. Are maintenance expenditure limits established and published for commercial equipment?

### **G-23. Supersession**

This checklist replaces the previously published checklist(s) for maintenance expenditure limits.

### **G-24. Comments**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

## **Section V**

### **Operational Readiness Float (Division ADCS/MACOM G-4)**

#### **G-25. Function**

The function covered by this checklist is operational readiness float (ORF).

#### **G-26. Purpose**

The purpose of this checklist is to assist the Division ADCS/MACOM G-4 in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-27. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-28. Test questions**

See paragraph 7-6.

- a.* Has a float coordinator been appointed in writing?
- b.* Are ORF assets being maintained in accordance with appropriate TMs, LOs, and so on?
- c.* Are ORF assets being used exclusively for their intended purpose?
- d.* Is ORF accountability being properly maintained?
- e.* Are excess float assets being disposed of in accordance with appropriate guidance and regulations?
- f.* Is float demand information accurate and submitted in a timely manner?

### **G-29. Supersession**

This checklist replaces the previously published checklist(s) for operational readiness float.

### **G-30. Comment**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

## **Section VI**

### **Operational Readiness Float (HQDA Materiel Developer and DCS, G-4 (AMC))**

#### **G-31. Function**

The function covered by this checklist is operational readiness float.

#### **G-32. Purpose**

The purpose of this checklist is to assist the HQDA materiel developer and DCS, G-4 (AMC) in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-33. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-34. Test questions**

See paragraph 7-6.

- a.* Are initial ORF requirements being properly developed, coordinated, documented, and funded during the fielding process?
- b.* Are ORF authorizations being properly computed, validated, and updated?

c. Is DA Form 2406 being submitted in accordance with AR 700-138?

### **G-35. Supersession**

This checklist replaces the previously published checklist(s) for operational readiness float.

### **G-36. Comment**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

## **Section VII**

### **Specialized Repair Activities (DCS, G-4 (AMC))**

#### **G-37. Function**

The function covered by this checklist is specialized repair activities (SRAs).

#### **G-38. Purpose**

The purpose of this checklist is to assist DCS, G-4 (AMC) in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-39. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-40. Test questions**

See HQDA message, DALO-SMM, 051750Z Nov 93, subject: Changes to Specialized Repair Activity (SRA) Procedures.

- a. Has a primary point of contact for SRAs been assigned?
- b. Has a standard, automated system for evaluation of SRA requests been provided to the MSCs and USAMC?
- c. Is the required database being maintained with current status?
- d. Are monthly reports being provided in a timely manner?
- e. Are SRA requests acted upon (approvals and disapprovals) in a timely manner?

#### **G-41. Supersession**

This checklist replaces the previously published checklist(s) for specialized repair activities.

#### **G-42. Comment**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

## **Section VIII**

### **Specialized Repair Activities (Division ADCS/Overseas MACOM DCS, G-4)**

#### **G-43. Function**

The function covered by this checklist is specialized repair activities.

#### **G-44. Purpose**

The purpose of this checklist is to assist Division ADCS/Overseas MACOM DCS, G-4 in evaluating the key management controls listed below. It is not intended to cover all controls.

#### **G-45. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

#### **G-46. Test questions**

See HQDA message, DALO-SMM, 051750Z Nov 93, Subject: Changes to Specialized Repair Activity (SRA) Procedures.

- a. Are requests for SRA authority being prepared with all required information/data?

- b.* Has SRA authorization been obtained before depot-level repairs are performed at GS level?
- c.* Are annual reports which show number and costs of depot-level repairs performed being submitted in a timely manner?

**G-47. Supersession**

This checklist replaces the previously published checklist(s) for specialized repair activities.

**G-48. Comment**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

**Section IX**

**Specialized Repair Activities (AMC MSC commander/maintenance inspector)**

**G-49. Function**

The function covered by this checklist is specialized repair activities.

**G-50. Purpose**

The purpose of this checklist is to assist AMC MSC commander/maintenance inspector in evaluating the key management controls listed below. It is not intended to cover all controls.

**G-51. Instructions**

Answers must be based on the actual testing of controls (for example, document analysis, direct observation, interviewing, sampling, simulation, or other). Answers that indicate control problems must be explained (and corrective action indicated) in supporting documentation. These controls must be evaluated in accordance with the schedule in the management control plan.

**G-52. Test questions**

See HQDA Message, DALO-SMM, 051750Z Nov 93, Subject: Changes to Specialized Repair Activity (SRA) Procedures.

- a.* Have primary and alternate points of contact for SRA been assigned?
- b.* Have suspense controls been implemented?
- c.* Is there a standard system developed for evaluating and tracking SRA requests?
- d.* Are all actions coordinated with DESCOM prior to final action?
- e.* Are approvals signed at GO/SES level?
- f.* Are information copies of approvals provided to HQAMC and LOGSA as required?
- g.* Are recommended disapprovals forwarded through channels to HQDA for final action?
- h.* Are required reports provided on time?

**G-53. Supersession**

This checklist replaces the previously published checklist(s) for specialized repair activity.

**G-54. Comments**

Help make this a better tool for evaluating management controls. Submit comments to the HQDA functional proponent, Deputy Chief of Staff, G-4, ATTN: DALO-SMM, 500 Army Pentagon, Washington, DC 20310-0500.

## **Glossary**

### **Section I Abbreviations**

**AAFA**

Army Aviation Flight Activity

**AAME**

Army Award for Maintenance Excellence

**AAR**

after action review

**AASF**

Army Aviation Support Facility

**ABS**

American Bureau of Shipping

**ACAT**

acquisition category

**ADCS**

Assistant Deputy Chief of Staff

**ADM**

acquisition decision memorandum

**ADMRU**

aviation depot maintenance round-out units

**ADP**

automatic data processing

**AEL**

Army Electronic Library

**AIS**

automated information system

**AIT**

automatic identification technology

**AMB**

Army Maintenance Board

**AMC**

Army Materiel Command

**AMCOM**

U.S. Army Aviation and Missile Command

**AMDF**

Army master data file

**AMF**

area maintenance facility

**AMMDB**

Army MARC maintenance database

**AMSA**

area maintenance support activities

**AMSA (G)**

area maintenance support activities (ground)

**AMSA (G/W)**

area maintenance support activities (ground/watercraft)

**AMSA (W)**

area maintenance support activities (watercraft)

**AMSAA**

U.S. Army Materiel System Analysis Activity

**AMSF**

area maintenance and supply facilities

**AOAP**

Army Oil Analysis Program

**APD**

Army Publishing Directorate

**APS**

afloat prepositioning ships

**AR**

Army regulation

**ARDEC**

Armament Research Development and Engineering Center

**ARL**

Army research laboratory

**ARNG**

Army National Guard

**ARSTAF**

Army Staff, HQDA

**ASA (ALT)**

Assistant Secretary of the Army (Acquisition, Logistics & Technology)

**ASA (FM&C)**

Assistant Secretary of the Army (Financial Management & Comptroller)

**ASA (MRA)**

Assistant Secretary of the Army (Manpower and Reserve Affairs)

**ASARC**

Army Systems Acquisition Review Council

**ASC**

Army Signal Command

**ASIOE**

associated support items of equipment

**ASTM**

American Standards of Test Measurement

**AT**

annual training

**ATE**

automatic test equipment

**AUTOSEVOCOM**

Automatic Secure Voice Communications Network

**AVCRAD**

Aviation Classification and Repair Activity Depot

**AVIM**

aviation intermediate maintenance

**AVUM**

aviation unit maintenance

**AWCF**

Army working capitol fund

**BASOPS**

base operations

**BDAR**

battlefield damage assessment and repair

**BDR**

battlefield damage repair

**BII**

basic issue items

**BOIP**

Basis of Issue Plan

**C4IEWS**

communications, command, control, computer, intelligence, electronic warfare and sensors

**CA**

commercial activities

**CARC**

chemical agent resistant coating

**CASCOM**

U.S. Army Combined Arms Support Command

**CBTDEV**

combat developer

**CC**

condition code

**CCI**

controlled cryptographic items



**CE**

communications-electronics

**CECOM**

U.S. Army Communications-Electronics Command

**CFR**

Code of Federal Regulations

**CG**

commanding general

**CIO/G-6**

Chief Information Officer, G-6

**CLSF**

Communications Logistics Support Facility

**CNGB**

Chief, National Guard Bureau

**COE**

Chief of Engineers

**COEI**

component of end item

**COMSEC**

communications security

**CONEX**

consolidated express

**CONUS**

Continental United States

**COSCOM**

Corps Support Command

**COTS**

commercial off-the-shelf

**CPC**

corrosion prevention and control

**CPP**

camouflage painting pattern

**CRDC**

CECOM Research and Development Center

**CSA**

Chief of Staff, U.S. Army

**CSMS**

combined support maintenance shop

**CSO**

customer service organization

**CSSAMO**

Combat Service Support Automation Management Office

**CTA**

common table of allowances

**CVE**

combat vehicle evaluation

**CWO**

customer work order

**CWT**

customer wait time

**DA**

Department of the Army

**DA Pam**

Department of the Army Pamphlet

**DCA**

Defense Communications Agency

**DCS, G-1**

Deputy Chief of Staff, G-1

**DCS, G-2**

Deputy Chief of Staff, G-2

**DCS, G-3**

Deputy Chief of Staff, G-3

**DCS, G-4**

Deputy Chief of Staff, G-4

**DDMC**

Defense Depot Maintenance Council

**DEH**

Director of Engineering and Housing

**DLA**

Defense Logistics Agency

**DLH**

direct labor hours

**DLR**

depot-level repairs

**DMCB**

Depot Maintenance Corporate Board

**DMISA**

depot maintenance inter-Service support agreement

**DMMP**

Depot maintenance mobilization plan

**DMMW**

depot maintenance mobilization workload

**DMOPS**

Depot Management Operations Planning System

**DMPE**

depot maintenance plant equipment

**DMSP**

depot maintenance support plan

**DMWR**

depot maintenance work request

**DOD**

Department of Defense

**DODD**

Department of Defense directive

**DODI**

Department of Defense instruction

**DOIM**

Director of Information Management

**DOL**

Director of Logistics

**DPAE**

Director, Program Analysis and Evaluation

**DPG**

defense program guidance

**DPW**

Director of Public Works

**DRMO**

Defense Reutilization and Marketing Office

**DS**

direct support

**DT**

developmental tests

**DWCF**

Defense Working Capital Fund

**ECC**

equipment category code

**ECOD**

estimated cost of repairs

**ECS**

equipment concentration sites

**EFC**

effective full charge

**EIR**

equipment improvement recommendation

**EMM**

equipment maintenance mission

**ERC**

equipment readiness code

**ESSC**

Electronics Sustainment Support Center

**ETM**

electronic technical manual

**EUSA**

Eighth United States Army

**EW**

electronic warfare

**FAD**

force activity designator

**FAR**

forward repair activity

**FEDC**

field exercise data collection

**FED LOG**

Federal Logistics Record

**FMC**

fully mission capable

**FMS**

foreign military sales

**FORSCOM**

U.S. Forces Command

**FRA**

Forward Repair Activity

**FTX**

field training exercise

**FUED**

first unit equipped date

**FXXI**

force twenty-one

**FY**

fiscal year

**GCSS–A**

Global Combat Support System–Army

**GOCO**

Government owned, contractor operated

**GOGO**

Government owned, Government operated

**GPM**

ground precautionary message

**GS**

general support

**GSA**

General Services Administration

**GSNS**

Ground Safety Notification System

**HAZMAT**

hazardous materiel

**HEMTT**

heavy expanded mobility tactical truck

**HQ**

Headquarters

**HQDA**

Headquarters, Department of the Army

**IDT**

inactive duty training

**IETM**

interactive electronic technical manual

**IEW**

intelligence and electronic warfare

**ILS**

integrated logistics support

**IMMA**

installation materiel maintenance activity

**IMMMA**

Internal Mission Materiel Maintenance Activity

**IMMO**

Installation Materiel Maintenance Officer

**IMO**

Installation Management Officer

**INSCOM**

U.S. Army Intelligence and Security Command

**IOC**

Industrial Operations Command

**IPD**

issue priority designator

**ISA**

Installation Support Activity

**ISSA**

inter-Service support agreement

**IT**

information technology

**ITIA**

initial troop installed and authorized

**JCALs**

Joint Computer Aided Logistics System

**JCS**

Joint Chiefs of Staff

**JOAP**

Joint Oil Analysis Program

**LAO**

logistics assistance office

**LAP**

Logistics Assistance Program

**LAR**

logistics assistance representative

**LCSEC**

Life Cycle Software Engineer Center

**LCSS**

life cycle software support

**LIDB**

logistics integrated database

**LIN**

line item number

**LMI**

logistics maintenance information

**LO**

lubrication order

**LOGCAP**

Logistics Civilian Augmentation Program

**LOGSA**

USAMC Logistics Support Activity

**LORA**

level of repair analysis

**LRU**

line replaceable unit

**LSA**

logistics support analysis

**LSAR**

logistics support analysis requirements

**LSE**

logistics support element

**LTP**

long-term preservation

**MAC**

maintenance allocation chart

**MACE**

Mobilization AVCRAD Control Element

**MACOM**

major Army command

**MAIT**

Maintenance Assistance and Instruction Team

**MAM**

maintenance advisory message

**MANPRINT**

manpower and personnel integration

**MATDEV**

materiel developers

**MATES**

mobilization and training equipment sites

**MC**

mission capable

**MCCR**

mission critical computer resources

**MDEP**

management decision package

**MEL**

maintenance expenditure limits

**METTT**

mission, enemy, time, terrain, and troops available

**MIIC**

management interest item code

**MILVAN**

military owed demountable container

**MMDF**

maintenance master data file

**MOA**

Memorandum of Agreement

**MOCT**

mean overhaul cycle time

**MOOTW**

military operations other than war

**MOS**

military occupational specialty

**MOU**

Memorandum of Understanding

**MPD**

maintenance priority indicator

**MRC**

maintenance repair code

**MRR**

maintenance replacement rates

**MSC**

major subordinate command

**MSP**

maintenance support plan

**MST**

maintenance support team

**MT**

maintenance technician

**MTBF**

mean time between failure

**MTBO**

mean time between overhaul

**MTDA**

modification table of distribution and allowance

**MTOE**

modification table of organization and equipment

**MTTR**

mean time to repair

**MWO**

modification work order



**NBC**

nuclear, biological, chemical

**NEOF**

no evidence of failure

**NET**

new equipment training

**NGB**

National Guard Bureau

**NICP**

national inventory control point

**NIIN**

national item identification number

**NMC**

not mission capable

**NMCM**

not mission capable maintenance

**NMCS**

not mission capable supply

**NMM**

national maintenance manager

**NMP**

National Maintenance Program

**NMWR**

national maintenance work requirement

**NRTS**

not reparable this station

**NSA**

National Security Agency

**NSN**

national stock number

**NTV**

nontactical vehicle

**OACSIM**

Office of the Assistant Chief of Staff for Installation Management

**OASD (PA)**

Office of the Assistant Secretary of Defense (Public Affairs)

**OCAR**

Office of the Chief of Army Reserve

**OCCM**

on condition cyclic maintenance

**OCIE**

organization clothing and individual equipment

**OCOC**

on condition oil change

**OCONUS**

outside the continental United States

**ODCS, G-3**

Office of the Deputy Chief of Staff, G-3

**ODCS, G-4**

Office of the Deputy Chief of Staff, G-4

**OMA**

Operations and Maintenance, Army

**OMAR**

Operation and Maintenance, Army Reserve

**OMS**

organizational maintenance shops

**OMSS**

organizational maintenance sub-shop

**OP**

operational plan

**OPTEMPO**

operational tempo

**ORD**

operational requirements document

**ORF**

operational readiness float

**OSD**

Office of the Secretary of Defense

**OSMIS**

Operating and Support Management Information System

**OT**

operational test

**PAS**

Personnel Automation Section

**PCB**

printed circuit board

**PD**

priority designator

**PEG**

Program Evaluation Group

**PEO**

program executive officer

**PLL**

prescribed load list

**PM**

program manager

**PMAF**

peacetime mission availability factors

**PMC**

partially mission capable

**PMCS**

preventive maintenance checks and services

**PMI**

preventive maintenance intermediate

**PMIS**

preventive maintenance inspection and service

**POC**

point of contact

**POI**

program of instruction

**POM**

program objective memorandum

**PPBES**

Planning, Programming, Budgeting, and Execution System

**PPSS**

post-production software support

**PRON**

procurement request order number

**PS**

program sponsor

**PWS**

performance work statements

**QA**

quality assurance

**QDR**

quality deficiency report

**QNP**

qualified national providers

**RAM**

reliability, availability maintainability

**RC**  
Reserve Component

**RCF**  
repair cycle float

**RCM**  
reliability centered maintenance

**RCS**  
report control symbol

**RDD**  
required delivery date

**REQVAL**  
requisition-validation

**RFP**  
request for proposal

**RIC**  
routing identifier code

**RIDB**  
readiness integrated database

**RO**  
requirements objective

**ROWPU**  
reverse osmosis water purification unit

**RPCO**  
recovery program control officer

**RPSTL**  
repair parts and special tools list

**RSC**  
regional support center

**RTSM**  
regional training site-maintenance

**SAAO**  
State Army Aviation Officer

**SAE**  
Society of Automotive Engineers

**SAMS**  
Standard Army Maintenance System

**SARSS**  
Standard Army Retail Supply System

**SCX**  
STAMIS computer exchange

**SDC**

sample data collection

**SECDEF**

Secretary of Defense

**SFIT**

special field information task

**SIDPERS**

Standard Installation/Division Personnel System

**SIGINT**

signals intelligence

**SKOT**

sets, kits, outfits, and tools

**SMMA**

satellite materiel maintenance activities

**SMR**

source, maintenance, recoverability

**SOLAS**

safety of life at sea

**SOP**

standing operating procedure

**SOR**

source of repair

**SOUM**

safety of use message

**SRA**

specialized repair activity

**SS**

supportability strategy

**SSA**

Supply Support Activity

**SSN**

standard study number

**SSP**

system support package

**SSTS**

sustainment systems technical support

**STAMIS**

Standard Army Management Information System

**STS**

systems technical support

**SURVIAC**

Survivability/Vulnerability Information Analysis Center

**T/VISC**

Training and Visual Information Support Center

**TA**

theater Army

**TACOM**

Tank-Automotive and Armaments Command

**TAEDP**

Total Army Equipment Distribution Plan

**TAMMIS**

Theater Army Medical Management Information System

**TAMMS**

The Army Maintenance Management System

**TAMMS-A**

TAMMS-Aviation

**TAT**

turnaround time

**TB**

technical bulletin

**TBO**

time between overhauls

**TDA**

table of distribution and allowances

**TDP**

technical data package

**TDY**

temporary duty

**TEDB**

TAMMS equipment database

**TI**

technical inspection

**TIPS**

tool improvement program suggestions

**TLRT**

total logistics response time

**TM**

technical manual

**TMDE**

test, measurement, and diagnostic equipment

**TOC**

total ownership cost

**TOE**

table of organization and equipment

**TPS**

test program set

**TRADOC**

Training and Doctrine Command

**TSG**

The Surgeon General

**UIC**

unit identification code

**UII**

unique item identifier

**UIT**

unique item tracking

**ULLS**

Unit Level Logistics System

**UND**

urgency of need designator

**USACECOM**

U.S. Army Corps of Engineers Command

**USACSLA**

U.S. Army Communications Security Logistics Agency

**USAF**

United States Air Force

**USAISC**

U.S. Army Information Systems Command

**USAMC**

U.S. Army Materiel Command

**USAMCOM**

U.S. Army Aviation and Missile Command

**USAOC&S**

U.S. Army Ordnance Center and School

**USAR**

U.S. Army Reserve

**USARC**

Commander, U.S. Army Reserve Command

**USCG**

United States Coast Guard

**USPFO**

U.S. property and fiscal officer

**UTES**

unit training equipment site

**UUT**

unit under test

**VI**

visual information

**WAC**

work accomplishment code

**WARCO**

warranty coordinator

**WOLF**

work order logistics file

**YTD**

year to date

**Section II****Terms****Administrative deadline**

Procedure for taking equipment out of service if the commander or unit maintenance officer determines it is necessary. Administratively dead-lined equipment is FMC per the applicable PMCS tables and is reported FMC per AR 700–138 and DA Pam 738–750 but is not used or dispatched. The following conditions are examples of typical situations (not an all-inclusive list) when administrative deadline of equipment would apply:

- a. Operation would result in a violation of published Federal, Department of the Army, local commander, or host-nation safety regulations if the equipment were dispatched or used.
- b. Pending completion of an official investigation.
- c. Pending transfer, turn-in, or disposition instructions.
- d. Pending inspection for a safety deficiency detailed under a safety-of-use message.
- e. Pending receipt of oil resample or special sample results.

**After operation checks**

PMCS checks and services performed per the TM/ETM 10–series PMCS tables at the conclusion of the mission to identify and correct faults that will preclude the next mission and to maintain the equipment to TM 10– and 20–series PMCS maintenance standard. Faults that render the equipment NMC and are within the authorized level of repair of the operator/crew to correct must be corrected immediately. Faults above the operator/crew authorized level of repair are immediately reported to unit maintenance for correction prior to start of the next mission. Unit maintenance performs unscheduled correction required by reports from operator/crew and performs required services per TM/ETM 20–series to maintain the equipment to the TM 10– and 20–series PMCS maintenance standard.

**Ammunition**

All Army-adopted class V items.

**Ammunition peculiar equipment**

Equipment used in depot to perform maintenance, surveillance, demilitarization, or preservation/packaging work on ammunition.



**Area Maintenance Support Activity**

Provides, on an area basis, technical assistance and unit maintenance support beyond the supported units' capabilities to accomplish during scheduled training assemblies. AMSA will be designated as follows:

- a. AMSA(G). Maintenance support for USAR ground equipment, other than aircraft, medical, and watercraft.
- b. AMSA(W). Support for USAR watercraft.
- c. AMSA(G/W). Support for USAR ground and watercraft.

**Army Aviation Flight Activity**

An ARNG TDA activity that provides AVUM-level functions in support of ARNG aviation assets.

**Army Aviation Operating Facility**

An ARNG TDA activity that provides AVUM-level functions.

**Army Aviation Support Facility**

An ARNG TDA maintenance activity that provides AVUM- and AVCRAD-authorized AVIM-level functions to support ARNG aviation assets.

**Army Oil Analysis Program**

Part of a DOD-wide effort to detect impending equipment component failures and determine lubricant condition through evaluation of used oil samples.

**Army Oil Analysis Program evaluation criteria**

Factors, including quantitative metal wear expressions, against which the results of oil analysis are compared to determine the condition of a component or lubricant and the necessity for maintenance.

**Assembly**

A combination of components/modules and parts used as a portion of, and intended for, further installation in an equipment end item (for example, engine, transmission, rotor head, electronic chassis/rack/cabinet).

**Associated support items of equipment (ASIOE)**

An end item required to support the operation, maintenance, and/or transportation of a BOIP item. ASIOE is listed on the BOIP of the item it supports. ASIOE has its own LIN and is separately documented into TOE/Vertical—The Army Authorization and Documents System (VTAADS).

**Automatic test equipment (ATE)**

Equipment designed to automatically evaluate the degree of unit under test (UUT) performance degradation. It may be used to perform fault isolation of UUT malfunctions.

**Available days**

The days equipment is on hand in an organization and fully able to do its mission; the time that equipment is FMC.

**Aviation classification and repair activity depot**

An ARNG TDA maintenance activity that provides AVIM and authorized depot-level functions.

**Aviation support facility**

TDA activity of a USARC that exercises centralized control and assures proper use and operation of USAR aviation assets, providing aviation training and logistics support beyond the capability of the supported units during training assemblies.

**Battlefield damage assessment and repair (BDAR)**

A wartime procedure to rapidly return disabled equipment to operational condition by expeditiously repairing, bypassing, or jury-rigging components to restore the minimum essential systems required for the support of a specific combat mission or to enable the equipment to self-recover.

**Before operation checks**

Checks performed by the operator/crew per TM/ETM 10-series PMCS tables to identify faults that will prevent performance of the mission and must be corrected prior to start of the mission. All faults are corrected or, if above operator/crew authorized level of repair, are reported to unit maintenance before the mission. Before operation checks should not take over 20 minutes for completion by the operator/crew.

**Black box**

An electronic assembly removed and replaced from the next higher assembly at the user level and generally synonymous with line replaceable unit (LRU).

**Built-in test**

A test approach using built-in test equipment or other integral hardware designed into equipment or components under test to self test and fault diagnose all and/or part of the equipment or component under test.

**Built-in test equipment**

Any identifiable, removable device that is part of equipment or components under test that is used for the express purpose of testing.

**Calibration**

Comparison of an instrument with an unverified accuracy to an instrument of known or greater accuracy to detect and correct any discrepancy in the accuracy of the unverified instrument.

**Combined support maintenance shop**

An ARNG TDA activity that provides DS and GS levels of maintenance on Federal surface equipment issued to the ARNG.

**Commercial activities (CA)**

Army-operated and Army-managed organizations that provide products or services that may be obtained by contract with private commercial sources. CA may be identified with an organization or a type of work, but must be separate facilities that can perform either in-house or by contract. Further, the CA must provide products and services regularly needed. CA will not provide products and services that will be used only once, for a short time, or for support of a special project.

**Component/module**

A combination of parts mounted together during manufacturing that may be tested, replaced as a unit, or repaired (for example, starter, generator fuel pump, and printed circuit board). The term "module" is normally associated with electronic equipment.

**COMSEC logistics support unit**

DS/GS maintenance activity for the maintenance of communication security equipment.

**Configuration**

The functional/physical characteristics of hardware/software set forth in technical documentation and achieved in a product.

**Configuration status accounting**

Recording and reporting of information needed to manage the configuration of a system or item effectively, including the approved technical documentation as set forth in specifications, drawings, and associated lists and documents referenced therein; the status of proposed changes to a configuration; and the implementation status of approved changes.

**Contract maintenance**

Any materiel maintenance operation performed under contract by commercial organizations (including the original manufacturers of the materiel).

**Controlled exchange**

Removal of serviceable parts, components, and assemblies from unserviceable, but economically repairable, equipment and their immediate reuse in restoring a like item of equipment to a combat mission capable condition.

**Critical characteristics**

Features (tolerance, finish, material composition, manufacturing, assembly, or inspection process) of a product, material, or process that, if nonconforming or missing, could cause the failure or malfunction of the item.

**Critical safety item**

Any part, assembly, subassembly, installation procedure, or production process that would have hazard probability

level A, B, C, or D chance of resulting in an unsafe condition if not in accordance with design data or quality requirements.

**Deferred maintenance**

Authorized delay of maintenance/repair of uncorrected faults.

**Deficiency**

A fault or problem that causes equipment to malfunction. Faults that make the equipment NMC are deficiencies.

**Department of Defense activity address code**

A six-digit code that gives a DOD delivery address for supplies and equipment.

**Depot-level reparable**

A class IX item with a maintenance repair code of D or L.

**Depot maintenance**

Materiel maintenance requiring major overhaul or a complete rebuilding of parts, assemblies, subassemblies, and end items, including the manufacture of parts, modifications, testing, and reclamation as required. Depot maintenance serves to support lower categories of maintenance by providing technical assistance and performing that maintenance beyond their responsibility. Depot maintenance provides stocks of serviceable equipment because it has available more extensive facilities for repair than are available in lower maintenance activities. Depot maintenance includes all aspects of software maintenance.

**Depot maintenance activity**

An industrial-type facility established to perform depot maintenance on weapon systems, equipment, and components. The term includes DOD installations and commercial contractors.

**Depot maintenance capability**

The availability of resources (facilities, tools, test equipment, drawings, technical publications, training, maintenance personnel, engineering support, and spare parts) required to carry out a specified depot maintenance task.

**Depot maintenance capacity**

This is the amount of direct labor hours (maintenance man-hours) that can be applied within a specified industrial facility or other entity during a 40-hour week.

**Depot maintenance core capability**

Depot maintenance core is the capability maintained within organic defense depots to meet readiness and sustainability requirements of the weapon systems that support the JCS scenario(s). Core capability exists to minimize operational risks and to guarantee required readiness for weapon systems. It will comprise only the minimum essential required facilities, equipment, and skilled personnel required to ensure a ready and controlled source of required technical competence.

**Depot maintenance work requirement**

A maintenance serviceability standard for depot maintenance operations. It prescribes the scope of work to be performed on an item by organic depot maintenance facilities or contractors, types and kinds of materiel to be used, and quality of workmanship. Also prescribes repair methods, procedures and techniques, modification requirements, fits and tolerances, equipment performance parameters to be achieved, quality assurance discipline, and other essential factors to ensure that an acceptable and cost-effective product is produced.

**Depot maintenance workload**

A specific depot repair requirement for a specific item to be repaired. Units of measure include man-hours, work years, costs, and sale prices.

**Discard and replace**

Procedure to follow if selected items are designated as nonrepairable and become inoperable.

**During operations checks**

Checks performed by the operator/crew per the TM/ETM 10-series PMCS tables that monitor operation of equipment and identify faults in equipment performance during the mission. Faults that render the equipment NMC require

immediate correction or authorization for limited operation using circle x status condition. All other faults are corrected (if above operator/crew authorized level of repair to correct) or reported during or after the mission.

**Electromagnetic environmental effect (E3)**

Any failure (or serious effect) apparently caused by, or related to, radio waves, electromagnetism, voltage or current pulses (static discharge, lightning, electromagnetic pulse, or transient electricity), from whatever source.

**End item code**

Data element that identifies a part to a specific end item. It is a three-position alphanumeric code that uses the full English alphabet and the numbers 2 through 9 and is structured so that each position of the code has a specific meaning.

**Equipment category code (ECC)**

A two-position alphabetical code. The first letter identifies the primary category of equipment. The two-position ECC is used in ADP systems to produce the complete description of an item of equipment by make, model, noun nomenclature, line number, and national stock number if desired or required. It is also entered in specified blocks or positions on manually produced data source documents.

**Equipment concentration site**

Area for support of USAR and other authorized units during IDT, AT, and mobilization; includes a maintenance branch.

**Equipment end item**

A final combination of assemblies, components, modules, and parts that is designed to perform an operational function and is ready for intended use. These end items are normally type-classified and assigned line item identification numbers (EM 0007 FEDLOG) but may require other end items to perform a mission (for example, tank, truck, radio, generators, and machine guns).

**Equipment improvement recommendation (EIR)**

Written reports on an SF Form 368 to report equipment faults in design operations and manufacturing of new equipment received that is below standard quality in workmanship under AR 702-7 and AR 702-7-1.

**Equipment performance data**

Historical information relating to the maintainability, reliability, and supportability characteristics of systems, subsystems, and components of weapons and equipment end items accumulated during their operational application or tests simulating actual operations.

**Equipment readiness codes**

A one-digit code explaining an item's importance to a unit's combat, combat support, or service support mission. The codes are assigned to items on modification tables of organization and equipment.

**Failure**

The event, or inoperable state, in which any item or part of an item does not, or would not, perform as previously specified.

**Fault**

A term used to indicate that a piece of equipment has a deficiency or shortcoming.

**Fault isolation**

Test performed to isolate faults within a piece of equipment.

**Forward support maintenance**

Maintenance oriented toward quick turnaround to the user in order to maximize combat time by minimizing repair and evacuation time.

**Fully mission capable (FMC)**

Systems and equipment that are safe and have all mission-essential subsystems installed and operating as designated by applicable Army regulation. An FMC vehicle or system has no faults that are listed in the "not fully mission capable ready if" columns of the TM/ETM 10- and 20-series PMCS tables that apply to the vehicle/system or its sub-system

required by AR 700–138. The terms ready/available and FMC refer to the same status: equipment is on hand and able to perform its combat missions.

### **General purpose TMDE**

TMDE that is used or possesses the potential to be used without significant modifications for test, measurement, and diagnosis of a range of parameters for two or more items of equipment or systems.

### **General support forces**

Training, logistics, and other support activities of the CONUS base; field activities; administrative headquarters and forces provided for peacetime-peculiar activities. Units/activities included in general support forces do not report status/readiness under AR 220–1. They are identified in Department of the Army Force Accounting System by a three-position force planning code beginning with a C.

### **Go/no-go (system)**

Condition or state of operability of a system that can have only two parameters:

- a. Go: Functioning properly.
- b. No-go: Not functioning properly. Such conditions are displayed using meters and/or visual or audible alarms, sensors, or similar mechanisms.

### **Initial operating capability**

First attainment by the MTOE unit of the capability to operate and support effectively in their operational environment a new, improved, or displaced Army Materiel System.

### **Installation Materiel Maintenance Activity (IMMA)**

TDA maintenance organization set up to provide DS/GS maintenance support and AVIM support for troop and/or installation operating equipment. An IMMA operates at one or more fixed locations.

### **Integrated logistics support (ILS)**

A composite of all the support considerations necessary to ensure the effective and economical support of a system for its life cycle. ILS is an integral part of all aspects of system acquisition and fielding. The principal elements of ILS related to the overall system life cycle are contained in AR 700–127.

### **Integrated materiel manager**

The materiel manager responsible for the execution of assigned materiel management functions for selected items or selected Federal supply classification classes.

### **Inter-Service maintenance support**

Maintenance operations performed by the organic maintenance capability of one military Service in support of another military Service.

### **Limited AVIM-level maintenance**

AVIM-level support performed by the ASF within available skills and resources authorized for unit maintenance, without adversely affecting the overall performance of unit support.

### **Line item number (LIN)**

A six-position alphanumeric number that identifies the generic nomenclature of specific types of equipment. Standard LINs consist of one alpha character followed by five numeric characters. Standard are assigned by the Army Materiel Command and are listed in EM 0007 FEDLOG.

### **Line replaceable unit (LRU)**

A combination of components/modules installed in an item of equipment or system that is replaceable in the operational environment (that is, under field or combat conditions). An LRU may be a printed circuit board, black box, component, major component, alternator, carburetor, avionics, tank engine, road wheel assembly installed weapons, and so forth. This repair by replacement is normally accomplished as far forward as possible by unit (organizational) maintenance personnel.

### **Maintainability**

Characteristics of design that inherently provide for the retention of and/or restoration of a specified condition within a given period of time when maintenance is performed by prescribed procedures and resources.

**Maintenance**

All actions necessary for retaining an item in or restoring it to a specified condition.

**Maintenance, corrective**

All actions performed as a result of failure to restore an item to a specified condition. Corrective maintenance can include any or all of the following steps: localization, isolation, disassembly, interchange, reassembly, alignment, and check-out.

**Maintenance capability**

Availability of those resources—facilities, tools, TMDE, drawings, technical publications, trained maintenance personnel, engineering and management support, and repair parts—required to perform maintenance operations.

**Maintenance capacity**

A quantitative measure of maintenance capability usually expressed as the number of man-hours or direct labor that can be applied within a specific maintenance activity or shop during a 40-hour week (one shift, 5 days).

**Maintenance concept**

The maintenance concept briefly defines the intended maintenance workload distribution within the Army maintenance system and the force structure required to maintain the end item or weapon system. It is largely based on the Organization and Operation Plan and is an integral portion of the logistics section of the requirement document.

**Maintenance engineering**

The application of techniques, engineering skills, and effort organized to ensure that the design and development of weapon systems and equipment provide adequately for their effective and economical maintenance.

**Maintenance operations**

The management and physical performance of those actions and tasks involved in servicing, repairing, testing, overhauling, modifying, calibrating, modernizing, and inspecting materiel in the operational inventory and the provision of technical assistance to equipment users in support units of the Army Logistics System.

**Maintenance significant item/materiel**

An end item, assemblage, component, or system intended for issue to the Army in the field that will require corrective maintenance services on a recurring basis.

**Maintenance standard**

A measure that specifies the minimum condition to which materiel must be restored by repair, overhaul, or some other maintenance function to ensure its satisfactory performance for a specified period of service.

**Maintenance support team (MST)**

A team formed from the resources of a maintenance activity, organization, or unit and specifically tailored to provide maintenance support to a designated unit or operation for specified tasks.

**Maintenance technician (MT)**

Full-time technician normally having dual status as a member of USAR unit; military technician assigned to USAR TDA maintenance activity.

**Major assembly**

Separately identified by type, model, and series and assigned item ID number (EM 0007 FEDLOG). For example, receivers or receiver transmitters in radio sets and machine guns or other weapons in secondary armaments subsystems of combat vehicles.

**Materiel change**

Configuration change involving substantial engineering and testing efforts on major end items to increase system/ combat effectiveness or extend the useful military life.

**Materiel developer (MATDEVs)**

The principal Army MATDEVs are the Army program executive officer/program managers (PEO/PM). For non-PEO/ PM managed systems, other MATDEVs include the U.S. Army Materiel Command, U.S. Army Information Systems Command, U.S. Army Intelligence and Security Command, COE, TSG, and Strategic Defense Command.

**Materiel maintenance**

The function of sustaining materiel in an operational status, restoring it to a serviceable condition, or updating and upgrading its functional usefulness through modification or other alteration.

**Mean time between failure (MTBF)**

A basic measure of reliability. The average number of failures of a specific item occurring during a specified time interval.

**Mean time to repair (MTTR)**

A basic measure of maintainability. The sum of corrective maintenance times at any specific level of repair, divided by the total number of failures within an item repaired at that level, during a particular interval under stated conditions.

**Medical standby equipment program**

Medical assets used in support of critical health care equipment; includes end items, components, or assemblies used to provide supported activities with serviceable items to replace unserviceable, economically repairable items.

**Mission-essential materiel**

That materiel authorized and assigned to approved combat and combat support forces that should be immediately employed to: destroy the enemy or its capacity to continue war; provide battlefield protection of personnel; communicate under war conditions; detect, locate, or maintain surveillance over the enemy; and permit contiguous combat transportation and support of forces and materiel. Equipment assigned to training missions of the same type and configuration as that assigned to combat and combat support forces and designated to be immediately employed for the purposes enumerated above is also mission-essential materiel.

**Mobile contact team**

USAR DS and GS maintenance personnel and AMSA/ECS MTs who visit units to provide technical assistance, make inspections, and perform maintenance when this procedure is more economical than transporting equipment or personnel to the activity.

**Mobilization and training equipment site (MATE)**

An ARNG TDA maintenance facility which, when collocated with a CSMS, provides full-time unit support to ARNG equipment assigned to the site. When not collocated, MATEs provide unit, DS, and GS support to equipment and units assigned.

**Module**

An assembly containing a complete self-contained circuit or sub-circuit. It may consist of a single printed circuit board (PCB), in which case it is synonymous with a PCB or may be comprised of two or more PCBs mechanically attached to one another and removable from the next high assembly as a single unit.

**Non-available days**

The number of days the equipment was not able to do its mission; the time the equipment is NMC. This term is used on DA Form 2406 to rate equipment's ability to do its combat or combat support job.

**Not mission capable (NMC)**

A materiel condition indicating that equipment cannot perform any one of its combat missions. NMC is divided into not mission capable maintenance (NMCM) or not mission capable supply (NMCS).

**Not mission capable maintenance**

Equipment that cannot perform its combat mission because of maintenance work underway or needed.

**Not mission capable supply**

Equipment that cannot perform its combat mission because of maintenance work stoppage due to supply backorders.

**Off-site maintenance**

Maintenance authorized to be performed by designated maintenance facilities not located where the equipment is operated.

**Oil analysis**

A test or series of tests (spectrometric and physical property) that provide an indication of equipment component and

oil condition by applying methods of quantitative measurement of wear metals and detection of contaminants in an oil sample.

#### **On-condition oil change**

An oil change directed by the AOAP laboratory as a result of findings relative to the condition of the oil and its lubricating capability.

#### **On-site maintenance**

Maintenance authorized to be performed where the equipment is operated.

#### **Operational readiness float**

A quantity of selected end items or major components of equipment authorized for stockage at CONUS installations and overseas support maintenance activities to extend their capability to respond to the materiel readiness requirements of supported activities. This is accomplished by providing supported activities with serviceable replacements from ORF assets when like items of equipment of supported activities cannot be repaired or modified in time to meet operational requirements.

#### **Organizational maintenance shop**

An ARNG activity that provides backup unit maintenance for Federal surface equipment issued to supported units.

#### **Organizational maintenance sub-shop**

An ARNG unit level maintenance sub-facility established to supplement limited available workspace authorized a parent OMS or geographic separation of supported units.

#### **Overhaul**

To restore an item to a complete serviceable condition as prescribed by maintenance serviceable standards. Normally accomplished at depot.

#### **Pacing items**

Major weapons or equipment systems of such importance that they are subject to continuous monitoring and management at all levels of command. Pacing items are identified in AR 220-1. Pacing items are noted on DA Form 5990-E or DA Form 2407.

#### **Part**

An item that cannot normally be disassembled or repaired, or is of such a design that disassembly or repair is impractical (for example, bracket, gear, resistor, or toggle switch).

#### **Physical property tests**

Analytical tests of used oil samples to detect oil property changes resulting from changing equipment conditions or maintenance practices.

#### **Possible days**

The number of calendar days an item was on hand on the property book during the DA Form 2406 report. For an item received during the reporting period, count the first day it was on hand as a whole possible day. Do not count the last day an item is on hand (the day you lose it from your property book) as a possible day.

#### **Pre-combat checks**

Essential functional and safety checks performed by the operator/crew per the system's precombat checklist to ensure the system can perform its war-fighting mission. Faults that will prevent the performance of the mission must be corrected prior to the start of the mission. All other faults are corrected or, if above operator/crew authorization to correct, reported during or after the mission.

#### **Preliminary source of repair decision**

The source of repair decisions for the system and each subsystem scheduled for depot repair/overhaul as developed by the materiel developer as soon as the system and subsystems are developed enough to conduct a source of repair analysis and make analysis-based decisions. This will be the source of repair decision used for planning purposes until milestone III, when the major subordinate command assumes the source of repair decision responsibility.



**Preventive maintenance**

All actions performed in an attempt to retain an item in a specified condition by providing systematic inspection, detection, and prevention of incipient failures.

**Preventive maintenance checks and service (PMCS)**

Preventive maintenance checks and service is the care, servicing, inspection, detection, and correction of minor faults before these faults cause serious damage, failure, or injury. The procedures and the category of maintenance to perform PMCS are found in the 10- and 20-series equipment TMs and LOs or ETMs.

**Quality deficiency report (QDR)**

The authorized means for users of Army equipment to report, either by message or SF Form 368, equipment faults in design, operations, and manufacture.

**Readiness**

The capability of a unit/formation, ship, weapon system, or equipment to perform the mission or functions for which it is organized or designed.

**Rebuild**

A zero time/zero mile overhaul.

**Regional maintenance center (RMC)**

A CE DS/GS maintenance activity with fixed shops and contact teams that is managed by ASC. The RMC will support ASC Consolidated Glossary Maintenance Management Update 15. Equipment operated at installations and within a specified support area.

**Release action**

An order rescinding a suspension or restriction. It puts materiel back in use or releases it from restriction(s). See TB 9-1300-385 for more information.

**Reliability centered maintenance (RCM)**

A logical discipline for developing a scheduled-maintenance program that will realize the inherent reliability levels of complex equipment at minimum cost.

**Repair**

Restoration or replacement of parts and/or units to maintain efficient operating conditions.

**Repair cycle float (RCF)**

An additional quantity of selected end item or major components of equipment approved for stockage in the wholesale supply system to replace like items of equipment withdrawn from using activities for scheduled depot maintenance or, in the case of the aircraft, the depot maintenance of crash-damaged equipment. This float is used primarily to extend the economic service life of selected items of Army materiel by providing for their depot maintenance on a timely basis without detracting from the materiel readiness of using activities.

**Repairable item**

An item that can be restored to perform all of its required functions by corrective maintenance.

**Reparable**

Class IX secondary items that carry a maintenance repair code (MRC) of D, F, H, or L.

**Restriction**

An order placing special working limits on materiel. The limits are set for safety or because of degraded performance.

**Retail inter-Service support**

Support accomplished at the post, installation, and base level and between operating commands with resources that are available to the installation commander.

**Sample data collection plan**

An SDC planning document prepared by the SDC proponent agency to identify required resources, sampling methodology, objectives, and anticipated benefits.

**Sample data collection program**

An integrated field data system designed to collect, process, analyze, report, follow-up, and manage engineering, maintenance, and supply data in support of selected equipment. This equipment can be currently in production/fielded, training requirements, and other logistics programs.

**Satellite Material Maintenance Activity**

A maintenance activity geographically removed from its parent installation. An SMMA is authorized EMMs to provide economical and timely support maintenance to units and activities whose parent installation cannot meet their needs.

**Scheduled PMCS services**

Checks and services performed by unit maintenance personnel with assistance from the operation/crew per the TM/ETM 10- and 20-series PMCS tables and lube orders. Some equipment also requires scheduled PMCS tasks to be performed by DS personnel per the equipment TM/ETM 30-series. All equipment faults are corrected or, if above the unit maintenance level authorization (per MAC) to correct, job ordered to DS maintenance. Deferred maintenance is completed during the scheduled service. Upon conclusion of the service, equipment should meet the TM/ETM 10- and 20-series maintenance standards.

**Serious defect (applies to ammunition)**

Defect resulting from bad design, manufacturing, handling, or storage that may cause malfunctions when ammunition is handled or fired.

**Service life surveillance**

Postproduction inspection, test, and analysis activity that verifies the actual condition of items after periods of use or storage.

**Shop replacement unit**

A component/module installed in an end item of equipment, system, or LRU that is replaceable only in a repair facility (shop environment) designated in the applicable maintenance allocation chart.

**Shortcoming**

A fault that requires maintenance or supply action on a piece of equipment but does not render equipment NMC.

**Special mission alteration**

A materiel change, normally of a temporary nature, required for the accomplishment of a special mission.

**Special purpose alteration**

Materiel changes authorized in appropriate TMs to enable the operation and use of equipment for specific climatic or geographic conditions.

**Specialized repair authority**

A GS maintenance unit or activity that is authorized special tools and test equipment and that performs depot levels of repair on DA-designated items of materiel coded D or L in maintenance allocation charts.

**Spectrometric analysis**

A method to determine the concentration of various chemical elements in an oil sample by means of spectroscopy, primarily to detect the presence of abnormal amounts of wear metal that may indicate the potential failure of a component.

**Sub-shops**

Sub-elements of AMSAs, CSMs, ECSs, or OMSs established when the density of equipment is sufficient to make such an operation cost effective.

**Substitute item**

An item authorized issue instead of, or in place of, an authorized standard item of like nature and quality. EM 0007 FEDLOG identifies items and procedures for making substitutions.

**Subsystem**

A separately authorized item issued or intended to work with other items to form an operational unit/system.

**Support equipment**

All ancillary and associated equipment (mobile or fixed) required to separate and support a materiel system. This

includes ASIOE such as trucks, air conditioners, generators, ground handling and maintenance equipment, tools metrology, calibration and communications equipment, test equipment, and automatic test equipment with diagnostic software for both on and off equipment maintenance.

### **Support system**

Collectively, those tangible logistic support resources required to maintain a materiel system in an operationally ready condition. It is developed with the materiel system and merged with the ongoing logistic systems upon production and development. The following elements of integrated logistics support constitute the support system: support and test equipment, supply support, transportation and handling, technical data, facilities, and trained personnel. The other elements of ILS are the means by which the support system is developed and implemented.

### **Surge**

The act of expanding an existing depot maintenance repair capability to meet increased requirements by adjusting shifts; adding skilled personnel, equipment, spares, and repair parts to increase the flow of repaired or manufactured materiel to the using activity; or for serviceable storage.

### **Suspended munitions**

Munitions removed from issue, movement, test, and use with or without limitations. These are removed because of a suspected or known unsafe or defective condition. Reference TB 9–1300–385 for definitions and instructions on suspensions, restrictions, and release of ammunition.

### **System**

A combination of equipment end items, assemblies, major components, components, modules, and parts assembled as a single functional unit to perform a task or mission.

### **System peculiar TMDE**

TMDE dedicated to peculiar test and repair of a single materiel system or item of equipment.

### **System test support package**

An assemblage of support elements provided prior to and used during development and operational tests to validate the organizational, DS, and GS maintenance requirements and capability. The maintenance test support package includes all required draft equipment publications (operator through GS maintenance equipment manuals); parts accessories; special and common tools; test, support, calibration, and maintenance shop facilities; and personnel skill requirements.

### **Tentative source of repair**

System source of repair (SOR) decision made by the materiel developer prior to the data being available for a detailed cost based analysis. Based on the combat developer's maintenance concept and other judgment factors. The tentative SOR will be used for early depot workload planning but is subject to change as the system is developed. The tentative SOR decision will be replaced by the preliminary SOR decisions as soon as the data are available to do an analysis using the decision tree methodology.

### **Test, measurement, and diagnostic equipment (TMDE)**

Any system or device capable of being used to evaluate the operating condition of a system or equipment to identify and/or isolate any actual or potential malfunction. TMDE also includes automatic test equipment (ATE) and test program sets (TPSs).

### **Test program sets (TPSs)**

The combination of interface devices, software test programs, operational test program instructions, and documentation that allows the ATE and/or TMDE operator to perform the testing and/or diagnosis action on the UUT.

### **Unit identification code**

A six-character code assigned to a specific unit.

- a. All units organizations, and activities will use their own UIC.
- b. Contractors, manufacturers, and commercial activities do not have UICs. They will use the five-digit Commercial and Government Entity (CAGE) code prescribed by SB 708–43. Put the letter “K” in front of the FSCM. For example, General Motors FSCM 24617 will be turned into a contractor UIC, K24617.

### **Unit maintenance shop**

Facility located in conjunction with a USAR center; unit training and equipment site; a maintenance facility located in conjunction with a USAR center.

**Unsafe condition**

An occurrence of hazard severity category I or II or MIL-STD-882. This includes the conditions that cause loss or serious damage to the end item or major components, loss of control, death, serious injury, or illness.

**User representative**

The combat developer designated to represent the user in development and testing of new or improved systems.

**Section III****Special Abbreviations and Terms**

This section contains no entries.

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