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## Maintenance of Supplies and Equipment Guide to Field Maintenance Operations

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By Order of the Secretary of the Army:

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**Suggested improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to [usarmy.pentagon.hqda-dcs-g-4.mbx.publications@army.mil](mailto:usarmy.pentagon.hqda-dcs-g-4.mbx.publications@army.mil).

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## **Chapter 1**

### **Introduction**

#### **1–1. Purpose**

This pamphlet provides a single go-to reference for applying the fundamental maintenance approach to field maintenance operations. This pamphlet serves as an aid for maintenance leaders in understanding the field maintenance structure, programs, and processes they are responsible for; the role of maintenance personnel; fundamentals required to be successful; and the technical aspects of being a maintainer. These procedures are applicable to any field maintenance operation, regardless of the density of equipment or whether field maintenance support is organic, direct support, attached from a forward support company (FSC), or is received on an area support basis at echelons above brigade (EAB) level. This pamphlet applies to all Army equipment except installation equipment (see AR 420–1 and TM 5–600 series), industrial production equipment, munitions, aviation, nonstandard equipment that is locally purchased and has not been type classified or assigned a national stock number (NSN) (however, non-tactical (commercial) wheeled vehicles are covered by this pamphlet), or equipment procured with non-appropriated funds.

#### **1–2. References, forms, and explanation of abbreviations**

See appendix A. The abbreviations, brevity codes, and acronyms (ABCAs) used in this electronic publication are defined when you hover over them. All ABCAs are listed in the ABCA database located at <https://armypubs.army.mil/abca/>.

#### **1–3. Associated publications**

Policy associated with this pamphlet is found in AR 750–1.

#### **1–4. Records management (recordkeeping) requirements**

The records management requirement for all record numbers, associated forms, and reports required by this publication are addressed in the Records Retention Schedule–Army (RRS–A). Detailed information for all related record numbers, forms, and reports are located in Army Records Information Management System (ARIMS)/RRS–A at <https://www.arims.army.mil>. If any record numbers, forms, and reports are not current, addressed, and/or published correctly in ARIMS/RRS–A, see DA Pam 25–403 for guidance.

## **Chapter 2**

### **Army Maintenance and the Army Maintenance System**

#### **2–1. Army maintenance concept**

a. The Army's ability to shoot, move, and communicate depends on a functioning maintenance program. The effectiveness of Army maintenance depends on many systems, programs, and processes that all contribute to a unit's ability to provide freedom of action, prolonged reach, and endurance on the battlefield. Managing, executing, and reporting the maintenance of Army equipment requires an understanding of the entire program.

b. Army maintenance facilitates an optimal operational readiness rate by providing a foundation for a functioning maintenance program including multiple management systems and processes, execution of tasks, and reporting to higher echelons. Army maintenance is designed to give a basic platform of knowledge and a start point to set up and manage the maintenance process with a snapshot of the program in its entirety.

c. This pamphlet is designed as a guide for leaders at the company, battalion, and brigade levels who have a vital role in the management of maintenance. It describes the three layered elements—management, fundamentals, and technical skills—that together are essential for conducting a successful maintenance program. This pamphlet will explain how leaders can determine their capabilities, the processes they are responsible for, who manages various tasks at what level, how to enhance the teams, and how to report to higher echelons. This will be done through core objectives, with management at the center of the circle, maintenance fundamentals in the middle layer, and technical abilities in the outer layer. This approach, based on the idea that an effective maintenance operational readiness rate depends on the

inner layers of management and fundamentals leading into the technical aspect, is called the core maintenance approach.

## **2-2. Capabilities of maintenance to sustain combat power**

a. Army forces may be required to conduct operations across multiple domains to gain freedom of action in support of the joint force while extending operational reach. A key to successfully extending operational reach is the ability to anticipate the requirement to push sustainment support forward, specifically with regard to ammunition, fuel, replacements, and water.

b. Field Manual (FM) 3-0 discusses Army operations that entail significant operational risk, synchronization, capabilities convergence, and high operational tempo. Key considerations for operating in multiple domains include—

- (1) Mission command.
- (2) Reconnaissance in depth.
- (3) Mobility.
- (4) Cross-domain fires.
- (5) Tempo and convergence of effects.
- (6) Protection.
- (7) Sustainment.
- (8) Information operations.

## **2-3. Sustainment maintenance operations**

Maintenance is a subset of sustainment operations through the Ordnance Corps mission and purpose. FM 4-0 defines maintenance as all actions taken to retain materiel in a serviceable condition or to restore it to serviceability. The Army uses a two-level tiered maintenance system, comprising field and sustainment maintenance. Command teams, maintenance personnel, and planners must have a complete understanding of two-level maintenance fundamentals to plan and execute their mission. Maintenance is necessary for endurance and performed at the tactical through strategic levels of war. Maintenance can be applied to all commodities, ground equipment, aviation equipment, and watercraft.

a. For ordnance maintenance operations, see FM 4-30.

b. Medical maintenance roles and responsibilities are described in ATP 4-02.1.

## **2-4. Ordnance Corps mission and purpose**

The Ordnance Corps supports the logistics element of the sustainment warfighting function (see FM 4-30). This allows the generation of adequate combat power to defeat the enemy and to establish conditions to achieve the combatant commander's end state. The Ordnance Corps' complex and multifaceted mission is to provide munitions, maintenance, and explosives ordnance disposal (EOD) support to generate and maintain combat power and to provide protection to Army, joint, intergovernmental, interagency, and multinational forces. This support begins at the very inception of operations and continues, unabated, until operations are complete (see FM 4-30).

## **2-5. The Army maintenance system**

The Army maintenance system implements the maintenance concept through two levels of maintenance activity: field maintenance and sustainment. Each makes a unique contribution to the overall system. Sustainment is the higher level or industrial base of maintenance and field is down to the tactical troop level.

## **2-6. Sustainment maintenance**

Sustainment maintenance is the second level of the Army maintenance system. Sustainment maintenance—

a. Is performed by trained personnel in a secure environment using tools and test, measurement, and diagnostic equipment (TMDE). Components and end items are usually repaired "off system" and returned to the supply system or back to the owning unit by exception. The work is performed by national-level maintenance providers, including Army Materiel Command (AMC), organic industrial base, and other organizations when authorized through special repair authority or one-time authorization issued by AMC.

b. Can be employed at any point in the integrated logistics chain. The intent of this level is to perform commodity-oriented repairs on all supported items to return them to a national standard; to provide a

consistent and measurable level of reliability; and to execute maintenance actions that cannot be performed in the field.

## **2-7. Field maintenance**

Field maintenance is the first level of the Army maintenance system. Field maintenance—

a. Is characterized by the performance of maintenance tasks “on (near) system” in a tactical environment by trained personnel often utilizing using tools and TMDE to isolate faults with line replaceable units. Field maintenance is typically performed by operators and crews, with support of field maintenance personnel.

b. Involves more than simply replacing worn or broken parts (known as “remove-and replace actions”) but includes repair of components or end items on (or near) systems. It also includes adjustments, alignments, services, applying approved field-level modification work orders (MWOs), safety of use messages (SOUMs), faults and failure diagnoses, and battle damage assessment, repair, and recovery (BDAR/R).

c. Always returns equipment to the user (called “repair and return to user maintenance operations”).

d. Consists of supported field maintenance (external) and organic field maintenance (internal).

## **2-8. Supported field maintenance (external)**

There are two types of organizations that perform field maintenance: supported and organic. Supported field maintenance includes specific sections, also known as commodity shops. Commodity shops support customers through the evacuation work order process. The evacuation work order process is outlined in paragraph 5-14. The process can take the form of an FSC, support maintenance company (SMC), brigade support battalion (BSB), division sustainment support battalion (DSSB), aviation support battalion, logistics readiness center (LRC), or modified table of organization and equipment (MTOE) or table of distribution and allowances (TDA) or commercial maintenance activity. These supported field maintenance assets contain shops that provide specific maintenance capability for a battalion, brigade, or an additionally assigned unit. The personnel and specific shops depend on the structure of the unit and for whom they are providing maintenance. Supported field maintenance shops are also assigned to units through an FSC. The FSC shops provide support within the specific unit they are assigned to. It is important to know that brigade-level commodity shops are managed by warrant officers and battalion-level shops are managed by noncommissioned officer (NCOs).

## **2-9. Organic field maintenance (internal)**

Organic field maintenance involves field-level maintainers who are assigned to units with FSC or a MTOE or TDA authorized maintenance section to perform process (see para 5-2) and program-driven (see para 6-1) maintenance. An FSC will provide maintenance to a battalion to which they are attached. This type of maintenance is process- and program-driven, requiring communication and a direct relationship with the leaders and operators of the equipment they maintain. Instead of relying on specific evacuated work orders to support agencies, these maintainers use the preventive maintenance checks and services (PMCS) process to determine the equipment’s unscheduled maintenance requirements and specific TM for scheduled maintenance intervals (see para 5-5). An FSC will conduct both organic field maintenance actions for line units of the battalion and supported field maintenance actions for the battalion as a whole.

## **2-10. Ordnance officer and warrant officer military occupational specialty and description of duties**

Ordnance officers are support-focused, skilled at building relationships, and able to connect with others in a direct way. They are subject matter experts who advise commanders and units on sustainment operations in complex operating environments. Most importantly, all ordnance officers must be mission-focused because sustainment sets the reach and duration of Army operations. Ordnance officers are directly responsible for building and maintaining the Army’s combat power. They enable readiness through dynamic and articulate leadership to Soldiers in ordnance enlisted military occupational specialties (MOSs). Ordnance warrant officers provide maintenance and logistics in-depth system expertise, leadership, training, mentorship, and advice to officers and NCOs. They administer, manage, maintain, operate, and integrate Army maintenance and logistical systems and equipment across the full range of Army operations.

Maintenance warrant officers are confident warrior leaders, mission-oriented subject matter experts, innovative integrators of emerging system technologies, and expert technical advisors. As highly specialized

maintainers, they support a multitude of Army missions throughout their career (see app C for details on the various MOSs).

### **2-11. Enlisted maintenance military occupational specialty and description of duties**

NCOs serve four core roles: trainers, mentors, advisors, and communicators. They conduct the daily operations of the Army. They are responsible for maintaining and enforcing standards and a high degree of discipline. Among many other duties, NCOs teach basic Soldiers skills, are accountable for the care of Soldiers, and set the example. The NCO must be an adaptive leader, proficient in the full range of joint and combined expeditionary warfare and operations (see app C for enlisted maintenance MOS).

### **2-12. Additional skill identifiers for maintainers**

See appendix C.

## **Chapter 3**

### **Field Maintenance Organization**

#### **3-1. Army maintenance management**

Army maintenance management is fundamental to a successful maintenance program. Failure to properly manage the program results in systematic failures that become evident with a low operational readiness rate. Key elements to understand include—

- a. The structure of the organization. The type of the unit determines capabilities, unit mission, command and control, overall management of tasks, communication to the command, and reporting to higher echelons. This will also indicate internal and external maintenance capabilities (see para 3-2).
- b. Types of maintenance organizations.
- c. The personnel who execute or oversee the execution of maintenance systems and processes, and their duty descriptions (see paras 4-2 through 4-13).

#### **3-2. Maintenance structures**

a. Maintenance structures encompass the personnel and equipment available to a unit, activity, or other organization as defined by the MTOE or TDA. Identifying the organization's structure is necessary to determine its maintenance capabilities. To determine the structure, input the assigned unit identification code (UIC) into the U.S. Army Directorate of Force Management System Web (FMSWeb), available at <https://fmsweb.fms.army.mil/>. The structures are broken down by line and paragraph number and will provide the authorized MOS type and grade. The information in FMSWeb will be listed in a spreadsheet format. The format must be drilled down by paragraph, line number, MOS, and authorizations to extract the information required.

b. Once authorizations have been determined, compare them with the actual on hand list of personnel with the company to which you are assigned for the actual number. This can be found on the Alpha Roster (AAA-162) or the first sergeants manning roster. Comparing on hand to authorizations will reveal shortages, over-strength staffing, or personnel assigned to other sections. Determining personnel shortages is critical for managing the team. This must be done for equipment as well.

c. The next step is to determine the internal command and control and MOS capability of these sections. Building a flowchart can help structure the sections and see how they work together. Using the paragraph and line numbers to extract these sections and organize them will also give a snapshot of the MOSs that are within each section to help determine personnel capabilities. The maintenance structure can comprise more than one MTOE paragraph.

#### **3-3. Units with no maintenance capability (dependent units)**

Many units, called "dependent units," do not have field-level maintainers assigned to their organization by MTOE. The dependency statement on the unit's MTOE will describe this on the narrative page. Dependent units require external support for the maintenance of their equipment. This can be accomplished in a number of ways. A local SMC will be assigned to them or another unit or maintenance activity can be task-organized to perform the necessary maintenance. When there is no SMC available, a support plan needs to be determined by the senior commander. In garrison, this is normally, but not always, the garrison's commander.

- a. Support plans need to be established for field training, deployments, and in garrison operations.
- b. Commanders must be aware that units are assigned personnel from a vehicle-to-maintainer ratio calculated by U.S. Army Combined Arms Support Command Force Development Directorate using manpower requirements criteria data stored in FMSWeb. Manpower requirements criteria is the Headquarters, Department of the Army (HQDA)-approved staffing standards used by the Force Management Support Agency to determine minimum mission essential wartime personnel requirements for maneuver support and sustainment functions in tables of organization and equipment (for example, cooks, unit-level maintainers, and supply personnel).
- c. Units are not assigned extra maintainer capacity for their own mission, which means providing maintenance for an additional unit will increase the man-hour requirement and will degrade both units' capability. Leaders will need to plan for longer lead times on tasks and make maintainer availability within the motor pool a top priority.
- d. Support field-level maintenance units do not have an organic capacity of their own and tend to use their Automotive and Track sections to conduct the program- and process-driven maintenance. Using this structure to support an additional company or other units will further degrade their capacity.
- e. Consideration for funding sources should be included within the installation support plan concerning maintenance activities.

### **3–4. Organic maintenance team**

Organic maintenance teams are assigned to specific companies. These teams are designed to provide capability to maintain the specific equipment within the company. Units that have their own “AA” UIC and that can be assigned to different battalions as support tend to have their own teams. Examples of these teams are those within DSSBs, engineer brigades, and standalone organizations. The field-level maintainers on these teams will be managed by a motor sergeant and, on occasion, a maintenance warrant officer (915A or 919A). These companies will be assigned to a headquarters with their own “AA” UIC. The headquarters will have another maintenance company or maintenance activity assigned to the battalion for use of supported external maintenance. Organic maintenance teams are not managed by a maintenance control section. A division sustainment brigade and DSSB force design update changes these units from lettered to numbered “AA” to “A0,” “B0,” “C0,” and so forth, which changed the UIC structure.

### **3–5. Field maintenance company**

The role of a field maintenance company is to provide field-level maintenance support to the BSB and brigade combat team (BCT). The field maintenance company provides repair capability for automotive, ground support, communications and electronics, land combat missile systems, and armament systems. The company provides services, including welding and machine shop support and recovery support. The field maintenance company also provides limited field-level maintenance reinforcement support to the FSCs for low-density commodities such as communications, electronics, and armament equipment (see ATP 4–90).

### **3–6. Forward support company**

The role of the FSC is to provide logistics in direct support to maneuver, fires, and engineer battalions. The FSC provides the supported commander with dedicated logistics assets organized to meet the battalion's requirements. An FSC provides field feeding (future structure transitioning to field feeding companies), bulk fuel, general supply, ammunition, and field-level maintenance to the maneuver battalion. The FSCs provide brigade, battalion, and BSB commanders flexibility for providing logistics support. FSCs provide the BSB commander the ability to task, organize, and prioritize the logistics effort to support large-scale combat operations (see ATP 4–90).

### **3–7. Field maintenance teams**

Field maintenance teams (FMTs) are sections of field-level maintainers within an FSC that are used in the execution of organic field maintenance for specific companies when assigned or attached to their supported battalion. For example, D FSC of a BSB will be assigned or attached to another unit, for example, Cavalry, for internal and external maintenance. The FSC will have a set team of field-level maintainers (that is, organic maintenance) for each company and commodity shops (that is, supported field maintenance) for work the FMTs cannot complete. This is a limited version of the BSB commodity shops managed by NCOs. It is important to know that an FMT will have a dual relationship. The maintenance control



section will track and manage all maintenance data and processes while the company commander of the assigned company will be responsible for the maintenance of their equipment. Different units decide whether to keep the field-level maintainers within the FSC or attach them to the company they support.

### **3–8. Brigade support battalion**

The BSB provides logistics and medical support to a BCT and multifunctional support brigades. BCTs are the primary combined arms force that provide combat power to execute close combat during large-scale combat operations. The BSB is capable of employment across the range of military operations and in any environment. ATP 4–90 provides an overview of the BSB's role and describes how the BSB provides support to BCTs and multifunctional support brigades. It is imperative for BSB commanders and staff to understand the BSB role and responsibilities within the overall combined arms approach to operations.

### **3–9. Support maintenance company**

a. The SMC is a modular maintenance company that provides field maintenance support on an area basis to units at EAB. The SMC is normally attached to a DSSB but may be attached directly to a sustainment brigade headquarters or other headquarters element if dictated by the situation. The SMC is structured to provide maintenance support to a wide variety of organizations and for most types of equipment. The SMC provides the following commodity-based maintenance—

- (1) Allied trades support for welding, cutting, and machine job work orders.
- (2) Wheeled vehicle recovery assets for units requiring support.
- (3) Armament sections for weapon maintenance.
- (4) Wheeled vehicle repair shop.
- (5) Communications and electronics maintenance for special electronic devices, radios, optics, and miscellaneous equipment.
- (6) Ground support equipment (GSE) for generator, power generation, utility equipment, and vehicle air conditioning.

(7) TMDE and maintenance and quality control (QC) for calibration of tools (see FM 4–30).

b. Maintenance support NCOs are assigned to the maintenance control section to perform as the motor sergeant for supported EAB units that do not have a motor sergeant (see para 4–6.)

c. Liaison visits are provided to supported units within their operational footprint to establish relationships, facilitate discussions of maintenance requirements, and enable SMC to ensure that parts and special tools are on hand. Field-level maintainers from GSE, automotive, armament, electronic, and allied trades maintenance form the liaison teams.

d. SMC assists EAB units with the Command Maintenance Discipline Program (CMDP) especially for weapons maintenance, communications and electronics, and allied trades.

e. The SMC does not have the mechanics, tools, or training to work on the main weapons systems M1, M2, and Stryker with exception made for Stryker ambulance in units where that is assigned. Maintenance surge teams can be developed and assigned to support BCTs that required assistance from the SMC. Maintenance surge teams will be assigned by the Department of the Army on a mission basis comprised of M1, M2, and Stryker MOS field-level maintainers.

### **3–10. Medical maintenance capability and organization**

Medical maintenance support is critical to both patient safety and medical device readiness; this includes operator-level medical device checks that must be performed in accordance with supporting manufacturer literature. Operators are additionally required to verify that all components documented on the start-up list are present and in good working order. Because medical devices are frequently procured without traditional Army TMs, support literature (such as brochures, instructions, operation and maintenance manuals, TBs, and user manuals) may alternatively be supplied to convey important medical device support requirements. For a comprehensive source of available medical device publications, see the Medical Materiel Information Portal (available at <https://go.usa.gov/xugh4>) and select the “Publications” tab for searchable access to medical device literature, unit assemblage handbooks, and medical device start-up lists. Operator checks are supplemented by medical maintainers who are the only personnel authorized to perform above operator-level service and maintenance. The most common medical maintenance support structures are—

a. *Organically assigned 68A.* Medical Company Area Support, BCT Medical Company (Charlie Med), Dental Company Area Support, and Medical Detachment Veterinary Services are assigned one to two

medical maintainers based on medical device density. These maintainers have limited available TMDE that are configured based on assigned medical devices within the unit. The role of the 68A is to perform maintainer-level scheduled services and field-level repairs. The 68A requires support of the existing maintenance section's equipment records parts specialist (ERPS) clerk for work order creation and closure, as well as assigned operators who must complete and document operator-level PMCS. Items that are beyond their capability will be evacuated to the supporting Medical Logistics Company.

*b. Medical Logistics Company.* The Medical Logistics Company provides field maintenance and limited sustainment support for medical devices assigned to units that lack organic 68A resources or when the support requirement exceeds organic 68A capabilities. The Medical Logistics Company is structured with three combat repair teams. These are placed near the supported customer (forward) and a base shop element that is located in the EAB area (see ATP 4–02.1 for more detail on Medical Logistics Company maintenance operations).

*c. Hospital center medical maintenance operations.* Hospital centers (HCs) and units under them are modular and established with maintenance personnel based on assigned medical devices in the unit. The primary deployable component of the HC is the field hospital where the 670A maintenance manager and maintenance shop noncommissioned officer in charge (NCOIC) are located. From this base, as HC components are added, medical maintainers will integrate into the appropriate maintenance shop. The HC and its units are designed to support organic medical devices, as well as the Forward Resuscitative Surgical Detachment operating in the area when tasked, if the Medical Logistics Company is not available (see ATP 4–02.1 for additional information).

### **3–11. Composite Watercraft Company**

The Composite Watercraft Company (CWC) is a modular watercraft company that provides field maintenance support on up to 16 assigned watercraft. The CWC is normally attached to a terminal battalion under a transportation brigade (expeditionary) but may be attached directly to other headquarters elements if dictated by the mission. The CWC maintenance platoon and section structure provides maintenance support to a wide variety of watercraft. The CWC provides the following commodity-based maintenance:

- a.* Marine maintenance personnel for marine system work orders and services support.
- b.* Allied trades support for welding, cutting, fabrication, and machine job work orders.
- c.* Wheeled vehicle recovery assets for units requiring support.
- d.* Armament repair personnel for weapon maintenance.
- e.* Wheeled vehicle repair personnel.
- f.* Communications, electronics, and radar maintenance for special electronic devices, radios, optics, radar, and miscellaneous equipment.
- g.* Crane and crane operator for heavy lift capacity.
- h.* Fuel service truck and petroleum specialist for vessel and equipment fueling.
- i.* Automated logistics specialist to maintain equipment records, parts, and inventories.
- j.* Equipped with forward repair system, Metal Working and Machining Shop Set Type 1 and 2, Machinist's Measuring Tool Set, refrigeration toolkit, general mechanics toolkits, welding shop kit, maintenance support devices, and radio test sets.

## **Chapter 4**

### **Field Maintenance Management Personnel**

#### **4–1. Maintenance managers**

Field maintenance managers are the officers, warrant officers, and NCOs who plan, organize, direct, coordinate, and control field-level maintenance assets and processes. BCT maneuver units will receive field maintenance support from FSCs attached to or in direct support of their respective units, with the remainder of the brigade receiving maintenance on an area support basis from the BSB, field maintenance company. Army corps, division commands, and modular support brigade elements will either be assigned maintenance support units or receive field maintenance support on an area basis from support maintenance companies. Regardless of how a unit accomplishes field maintenance, the most influential maintenance manager in a unit is its commander. Most management tasks are performed by the maintenance control officer (MCO), the maintenance warrant officer, the maintenance control supervisor (MCS), and motor sergeant or maintenance team chief in the FSC or organic maintenance element. At battalion and squadron level, the maintenance officer, maintenance warrant officer, and supervisor and motor sergeant

are the key maintenance managers. In some EAB organizations, the battalion S4 has a senior maintenance supervisor position to perform battle staff NCO maintenance tracking and management.

#### **4-2. Duty descriptions of maintenance personnel**

All maintenance leaders need to understand their role, duty descriptions, and place in the overall management of the program. This prevents more than one person spending time on the same tasks. Each position has specific tasks and management duties to execute the program effectively. Communication, process development, monitoring, and execution are all performed at different levels and positions. All leaders should know the duties of the positions above and below their own.

#### **4-3. Senior maintenance supervisor and battle staff noncommissioned officer**

Some organizations have a senior NCO position on their MTOE to provide resource planning for current and future operations, oversee maintenance workloads, provide mission material requirements, and identify systemic maintenance problems. This position provides coordination with external agencies for support required of the organization and requested units. These personnel manage electronic, armament, mechanical, special purpose, and engineer equipment maintenance requests to external agencies, along with other battle staff NCO duties.

#### **4-4. Maintenance platoon leadership**

The maintenance platoon leader and platoon sergeant are responsible for personnel, equipment, and training of the platoon. The maintenance platoon leadership coordinates with the MCO and MCS to focus training on battle tasks, using mission requirements both present and projected. The maintenance platoon leadership—

- a. Ensures company tasks are synchronized with the battalion maintenance mission.
- b. Communicates with the MCO daily.
- c. Is responsible for movement of the maintenance section to training events.
- d. Is responsible for unit maintenance collection point (UMCP) security and logistical packages.
- e. Develops platoon tactical plans in coordination with external maintenance mission requirements, including—
  - (1) Platoon defense (including sector sketches).
  - (2) Details to accomplish platoon and company mission, taking into account the maintenance workload and Soldiers most engaged in maintenance workload.
  - (3) Tactical road march and convoy plans for the platoon.
- f. Oversees the PMCS program for platoon equipment.
- g. Performs the duties of the MCO when no MCO is assigned.
- h. Performs other duties as assigned by the commander.
- i. In units with organic maintenance that are not authorized a shop officer, annually assesses the company or unit's maintenance capabilities against its maintenance mission on behalf of the battalion or unit commander. Ensures that the battalion commander is fully informed of the results. This does not apply to units with FSCs, as the support operations section will provide that assessment.

#### **4-5. The maintenance control section**

Field maintenance includes two types of maintenance control sections. One is part of the FSC's organization and the other is managed at BSB. Both will have supported and organic maintenance responsibilities. Supported field maintenance is an evacuated maintenance program through the evacuated work order process. Organic field maintenance is a program and process derived from command maintenance and maintenance plans.

- a. The FSC maintenance platoon headquarters contains the platoon command and control elements and the maintenance control section. It consists of the platoon leader, an MCO or shop officer who is also the platoon leader in units not authorized an MCO, maintenance technician, platoon sergeant, and MCS. In accordance with the concept of support developed by U.S. Army Training and Doctrine Command during the design of modular units, not all units will have FSCs. An FSC may come with FMTs in support of the companies in the unit to which it is assigned. In that concept, the FMTs will provide the organic field maintenance responsibilities for their assigned company with guidance provided from the maintenance control section. The maintenance control section will utilize the Automotive and Track section if there is no assigned FMT for the companies in the assigned unit.

b. The BSB maintenance control section manages the evacuation and external maintenance process for the brigade. This section is different from an FSC because the FSC is not assigned individual section maintenance warrant officers. Instead, each commodity section is managed by NCOs. This structure does not have organic FMTs for the execution of company maintenance other than those assigned to an FSC. The Automotive section of the BSB manages the organic field maintenance program for the companies with no maintenance teams through the 915A Automotive Maintenance Warrant Officer.

c. For units with organic field maintenance, refer to the unit's MTOE for specific authorizations. For units with no organic maintenance or FSCs, refer to the MTOE to determine if the unit receives maintenance support on an area basis; and to the operations orders, logistics standard operating procedures (SOPs), and higher headquarters to determine which unit provides field maintenance support. The dependency statement found in the MTOE narrative will direct unit to field-level maintenance support. The maintenance control section consists of an MCO, a maintenance technician, MCS, ERPS NCOIC, and sometimes a maintenance support NCO.

#### **4–6. The maintenance control officer**

The MCO must be thoroughly familiar with the capabilities and capacities of the individual sections. The MCO must stay informed of priorities assigned to supported units, expected workloads, shop progress, and maintenance supply status, in accordance with ATP 4–33. For an effective maintenance control operation, the MCO must have a thorough knowledge of the mission of the entire company and the supported battalion. It is important to know that this position is normally performed by a senior lieutenant and will take time to learn the maintenance program and all the duties associated. The MCO will lean heavily upon the maintenance technician and the MCS to learn how to effectively communicate and manage maintenance. The MCO—

- a. Communicates maintenance datasets and equipment readiness to the chain of command.
- b. Communicates with battalion and FSCs to sync missions and meet commander's intent. Attends battalion command and staff and FSC training meetings as the maintenance advocate.
- c. Pulls required reports from Global Combat Support System-Army (GCSS-Army) and evaluates the equipment to determine readiness for mission success.
- d. Reviews and communicates maintenance status to the command through maintenance meetings and reports required statistics to support operations. Ensures that the maintenance priorities and workloads are meeting the commander's intent and accomplishes external maintenance tasks assigned from support operations.
- e. Communicates command maintenance status and work order flow to company commanders and executive officers. This includes internal and external maintenance work orders.
- f. Forecasts mission readiness by communicating the equipment status report (ESR) and status of parts to the command. Ensures that all non-mission capable equipment is accurately captured on the ESR.
- g. Ensures the maintenance platoon mission is in sync with the battalion maintenance priorities.
- h. Evaluates the overall battalion PMCS program for effectiveness and accuracy. Assesses training and competence level of battalion operators, crews, and maintenance personnel. Develops plans to ensure that training and instruction are provided to meet skill requirements.
- i. Ensures that all GCSS-Army processes for capturing maintenance actions are being entered into the system properly. This includes fault creation, work orders, ordering parts, scheduling maintenance plans, and opening and closing dispatches.
- j. Assists the commander and platoon leader in planning tactical maintenance support for field operations.
- k. Communicates with external field-level maintenance support organizations to receive evacuated equipment status and ensure that work requests are kept to a minimum.
- l. Conducts meetings with commodity shop leaders to ensure work order accuracy and workflow, identify shortfalls, and synchronize shop objectives.
- m. Ensures that sufficient copies of TMs and lubrication orders (LOs) are available for performance of PMCS and field maintenance on all equipment assigned by MTOE.
- n. Requests support from the Army field support battalion (AFSBn) or appropriate logistics assistance representative (LAR) per equipment type when required.
- o. If assigned to an organization without internal capabilities to perform field-level maintenance, coordinates maintenance requirements for a maintenance support company or external maintenance facility.

- p. Ensures that maintenance support NCOs are assigned to specific dependent units that require maintenance support if performing in a SMC.
- q. Ensures that all material requisitions listed in ME5A/ZPARK adhere to local policy.

#### **4–7. The maintenance technician**

The maintenance technician develops the program and individual process steps, trains personnel, and ensures that the SOP accurately reflects the program. The maintenance technician will monitor all programs, implement training, and process changes based on productivity and tolerance to inspection standards. The technician will develop plans to enhance combat power at all times. The maintenance technician will also assist the MCO and platoon leader in the performance of duties and serve as the acting MCO and platoon leader in their absence. The maintenance technician is the expert in the execution of the CMDP. The maintenance technician—

- a. Develops the steps to execute internal, external, process, and program field-level maintenance. This is detailed in the SOP and includes all areas that are contained in the CMDP checklist. Makes changes to the SOP as deemed necessary and approved by the appropriate command level.
- b. Fulfills the role of expert in the overall maintenance program. Trains, teaches, coaches, and mentors all positions and personnel within the formation.
- c. Analyzes all datasets within the maintenance program and makes adjustments to training of personnel or processes based on adherence to standards. Develops plans to get maintenance within tolerance if the program is off track and delinquent in any area.
- d. Structures the maintenance platoon to ensure mission success by organizing the company, troop, and battery maintenance teams. This includes adjustments of personnel within maintenance sections for deployments or field operations. Must communicate these changes to the first sergeant and command sergeant major.
- e. Ensures the MCO and platoon leaders have an accurate picture of the program and current readiness posture. Ensures that the MCO can effectively understand and communicate to higher echelons the maintenance process and all data requirements of the program.
- f. Communicates with the battalion executive officer and commander on current combat power status and ways to build combat power at all times.
- g. Ensures all personnel assigned GCSS–Army roles are trained and proficient in the execution of associated tasks. Ensures that all GCSS–Army processes for capturing maintenance actions are being input into the system properly. This includes fault creation, work orders, ordering parts, scheduling maintenance plans, and opening and closing dispatches.
- h. Ensures that all equipment has a maintenance plan that is developed, scheduled, executed within tolerance, recorded, and updated within GCSS–Army.
- i. Trains and documents all personnel who perform technical inspections (TIs) and execute the quality assurance (QA) program. Monitors this program to ensure that inspectors assess and determine equipment readiness properly.
- j. Implements process and program steps to monitor maintenance, safety, modification work management, warranty, calibration, oil analysis, and technical or verification inspection programs within the organization. Ensures that personnel assigned these additional duties are trained and proficient in the performance of their duties.
- k. Assesses the ability of maintainers to perform repairs and conducts training based on skill level and performance.
- l. Assists the MCO and commanders in the facilitation of command maintenance and PMCS periods. This includes adding special equipment needing PMCS and not on the regular schedule, such as radios and optics. Provides training for operators and crews in the execution of PMCS and the process flow of the DA Forms 5988–E (Equipment Maintenance and Inspection Worksheet (EGA)).
- m. Monitors all internal and external work orders to ensure that prescribed maintenance timelines are within tolerance and meeting the unit’s mission. This includes parts being received, issued to unit-level maintainers, and installed within local SOP timelines.
- n. Develops the recovery program standards and ensures that all personnel know their roles and process to execute operations.
- o. Coordinates with the S3 or S4 for inclusion of the recovery plan into the operations plans and orders.

- p.* If assigned to an organization without internal capabilities to perform field-level maintenance, coordinates maintenance requirements for a maintenance support company or external maintenance facility.
- q.* Ensures that maintenance support NCOs are assigned to specific dependent units that require maintenance support if performing in a SMC.
- r.* Ensures that all material requisitions listed in ME5A/ZPARK are within budget, correct acquisition codes, recoverability codes, and proper GCSS–Army Release Strategy Codes (business rule violations) (see para 9–5).

#### **4–8. Maintenance control supervisor**

The MCS plays a critical role in the execution of parts reception, inventory, the ordering process, and issuing of parts to maintainers. The MCS will monitor all programs and processes for completion tolerance by maintenance sections and assigned organic field maintenance processes. The MCS will control the evacuated work order process. This includes evacuation, acceptance, execution, status changes, and closing of work orders. The MCS will assist the MCO and maintenance technician in the performance of duties when necessary. The MCS—

- a.* Monitors the execution of maintenance programs and processes. Coordinates with the motor sergeants when maintenance tolerance is exceeding expected completion times.
- b.* Ensures maintenance plans are executed on time and do not exceed the late date in GCSS–Army. Ensures service packets are completed properly, filed, and updated within GCSS–Army. This includes completing all open work orders with parts received associated with the equipment.
- c.* Ensures parts reception, inventories, and issue are being conducted, documented, and recorded in GCSS–Army.
- d.* Ensures that equipment and tool inventories are being conducted and accurate.
- e.* Monitors and ensures the dispatch process is enforced.
- f.* Ensures work orders are assigned to supported field maintenance sections, updated daily, and closed properly upon completion. Ensures that man-hours are captured on a daily basis. This includes capturing direct labor and non-productive time by personnel.
- g.* Ensures work orders are being completed properly by FMT.
- h.* Ensures Army Oil Analysis Program (AOAP), MWO, SOUM, reparable and recoverable item management, Modification Management Information System (MMIS) compliance, and TMDE tasks are being completed on time.
- i.* Ensures motor pool safety is being conducted, evaluated, and monitored. Inspects the motor pool and facilities where maintenance is being performed.
- j.* Ensures inventories are being conducted properly and are accurate for shop stock and recoverable and recoverable items needing to be returned to the supply support activity (SSA).
- k.* Supervises technical inspectors and NCOs performing QA checks.
- l.* Monitors DA Form 5988–E flow to ensure PMCS is conducted, not mission capable (NMC) vehicles are being tracked and actioned, and faults are diagnosed and repaired.
- m.* Reviews daily reports and ensures data is being executed within tolerance.
- n.* Manages the battalion recovery section, if applicable.
- o.* Manages all work orders evacuated outside the organization and internal to supported field maintenance shops. Ensures that customer accounts are established with supporting maintenance agencies and recorded with DA Form 1687 (Notice of Delegation of Authority - Receipt for Supplies) signed by the commander.
- p.* Ensures there is a publications program, an NCO is assigned the additional duty, and required publications are on hand for all equipment per MTOE.
- q.* Submits work requests when required for facility repairs.

#### **4–9. Maintenance support noncommissioned officers**

Maintenance support NCOs are found on MTOEs of support maintenance companies. The maintenance control section manages maintenance support NCOs and serves as a primary link between the MCO, the maintenance section, and supported EAB units with no motor sergeants or dependent units. The maintenance support NCOs specific duties include—

- a.* Inspecting and diagnosing faults for supported units with no capability.
- b.* Scheduling equipment for repair, depending on workload, parts availability, the priority of the requesting unit, and the priority of the specific equipment to support current operations.

- c. Providing field-level maintenance coordination and GCSS–Army support, operated by a 92A, for units with no GCSS–Army capabilities.
- d. Providing liaison visits to supported units within their operational footprint to establish relationships, facilitate discussions of maintenance requirements, and enable SMC to ensure that parts and special tools are on hand. Liaison teams comprise representatives from GSE, automotive, armament, electronic, and allied trades maintenance.
- e. Assisting EAB units with the CMDP especially for weapons maintenance, communications and electronics, and allied trades.

#### **4–10. Equipment records parts specialist noncommissioned officer in charge**

The ERPS NCOIC has a unique position. The NCOIC takes commands and workflow from the maintenance control section and manages the output of the battalion clerks. All FMTs have clerks assigned to their teams. The ERPS NCOIC ensures that all clerks within the battalion follow the SOP and are executing all GCSS–Army tasks properly for each of their assigned companies. The ERPS NCOIC manages the battalion's shop stock list (SSL) within the FSC storage locations and ensures parts are issued to all companies through work orders. Assigning the proper roles (work orders) to the FMT motor sergeants allows the clerks to manage the parts process. The ERPS NCOIC—

- a. Monitors the inbound (VL06I) report for parts at the SSA.
- b. Receives and processes parts from the SSA.
- c. Issues parts to work orders and teams.
- d. Stores SSL parts within assigned locations.
- e. Completes parts inventories.
- f. Turns in reparable and recoverable items to the SSA.
- g. Ensures dispatching process is being adhered to according to SOP.
- h. Files records necessary using ARIMS.
- i. Orders parts upon request from the motor sergeant. When motor sergeants take ownership of the work order process, they can order their own parts. This greatly eases the burden on the clerks and gives the motor sergeants a better ability to manage the reception and issue of parts.

#### **4–11. Motor sergeant and section sergeant**

The motor sergeant is directly responsible for the execution of the tasks associated with the maintenance program. Motor sergeants get their workload executed through the use of the shop foreman and the squad leaders within their formation. They are directly responsible for all tasks their subordinates complete. The motor sergeants receive priorities from the maintenance shop office and from their company commanders. The shop office is responsible for deconflicting battalion and company missions. Motor sergeants work administrative actions while shop foremen are on the floor ensuring proper execution.

a. Formations have two types of motor sergeants: FMT/organic motor sergeants and the supported field maintenance motor sergeant.

(1) The FMT/organic motor sergeants manage all the maintenance process and program tasks within their capability for their assigned companies. Work that cannot be done at the company level and requires execution by the battalion is managed by the supported motor sergeant. This position can be structured through an FSC as an FMT or individually assigned to a company on the MTOE.

(2) The supported motor sergeant manages the battalion-level commodity shops: GSE, small arms, and automotive and tracked vehicles. The automotive section is generally used to maintain the organic programs and processes in these structures (see chaps 5 and 6).

b. The motor sergeant manages maintenance execution. The motor sergeant ensures—

- (1) NCOs are assigned proper GCSS–Army roles to perform tasks within the system.
- (2) Work orders for all jobs are being executed.
- (3) Scheduled maintenance tasks are being conducted on time.
- (4) Unscheduled maintenance tasks are scheduled and being completed.
- (5) AOAP, SOUM, MWO, MMIS compliance, and TMDE are being executed within tolerance.
- (6) The Tool Program is being executed.
- (7) Shop safety is being adhered to at all times.
- (8) Parts are received and issued to jobs.
- (9) Reparable and recoverable items are turned in within standard times.
- (10) Petroleum, oil, and lubricants (POL) are inventoried and on stock.

- (11) Shop stock and bench stocks are stored and maintained per DA Pam 710–2–1.
- (12) All material requisitions in ME5A are within budget, correct acquisition codes, recoverability codes, and proper GCSS–Army Release Strategy Codes (business rule violations) (see para 9–5).
- c. The motor sergeant also—
  - (1) Reviews reports for tolerance and workload.
  - (2) Works with ERPS clerk for data cleansing within GCSS–Army.

#### **4–12. Maintenance shop foreman, senior mechanic, and senior maintainer**

a. The shop foreman takes guidance from the motor sergeant and issues the workload to the squad leaders. The shop foreman ensures that squad leaders have all the tools and equipment they need to complete their missions. The shop foreman ensures that all jobs are completed to standard, safety is being executed, and squad leaders are managing their workload properly and can fill in for the motor sergeants when necessary. The squad leader must be on the maintenance floor constantly and supervise the execution because the motor sergeant will typically be in meetings and working maintenance administrative actions. The shop foreman supervises the execution of maintenance tasks and issues workload to squad leaders for execution. This position is captured on MTOE with three different titles on different structure types. These positions can be assigned to units with organic or supported field-level maintenance. Supported field-level maintenance positions are commodity-based shops with work order maintenance as the main priority. Organic positions are process- and program- driven maintenance positions. The shop foreman also ensures—

- b. Work orders for all jobs are being utilized.
- c. Scheduled maintenance is being executed on time and tasks are issued to squad leaders for execution.
- d. Unscheduled maintenance tasks are issued to squad leaders.
- e. AOAP, SOUM, MWO, and TMDE are being executed by the proper personnel.
- f. The Tool Program is being executed by assigned personnel.
- g. Shop safety is adhered to at all times.
- h. Parts are received and issued to jobs on work orders.
- i. Work orders are closed out upon completion.
- j. Man-hours are updated daily to capture indirect and direct labor.
- k. Repairable and recoverable items are cleaned and turned in within standard times.
- l. POL is on hand and being used and disposed of properly.

#### **4–13. Maintenance squad leader**

The squad leader works alongside the troops and ensures they are using the TM and proper personal protective equipment and completing tasks to standard. The squad leader develops junior Soldiers to become leaders and NCOs. The squad leader receives workflow from the shop foreman and reports status throughout the day. The squad leaders must be present with their troops at all times. Squad leaders—

- a. Execute the maintenance program and processes.
- b. Ensure workload from shop foreman is understood and ready to be executed with assigned Soldiers.
- c. Ensure work orders for all jobs are completed by subordinates.
- d. Ensure unscheduled maintenance work orders are completed with the proper tools, parts, TMs, and POL.
- e. Assign tasks to subordinates and supervise the execution. Must be available to Soldiers at all times work is being conducted.
- f. Ensure tasks assigned to subordinates are completed to standard using the correct tools and repair procedures.
- g. Ensure Soldiers have appropriate tools and TMs.

#### **4–14. Other significant personnel**

Significant personnel are the first line of support to field-level maintainers. Without crew-level maintenance and Soldiers, Army combat power cannot be sustained to meet mission requirements. They assist the unit in maximizing equipment readiness by properly performing PMCS, conducting operator-level maintenance tasks, and maintaining ownership of assigned equipment.



*a. Commanders.* Commanders ensure that the maintenance SOPs provide clear guidance to the maintenance platoon, sections, leadership, operators, and crews on their responsibilities. The size of maintenance operations may vary from command to command; however, roles of maintenance, unit leaders, unit equipment records clerks, and operators are universal. In addition to commander considerations outlined in chapter 11, commanders—

- (1) Ensure command maintenance and PMCS are being conducted on all equipment.
- (2) Ensure that the leadership is present during maintenance periods.
- (3) Ensure maintenance is scheduled on the training calendar and executed.
- (4) Plan for maintenance operations to occur during training events.
- (5) Evaluate the readiness of equipment for anticipated missions or training events.
- (6) Communicate priorities of the battalion and company to sync the maintenance tasks.
- (7) Ensure that additional skill identifiers (ASIs) for appropriate MOSs are trained and certified.
- (8) Ensure that all reception of materials from the SSA or external providers are managed, tracked, and inventoried by maintenance leadership.
- (9) Ensure that the organization complies with dispatching standards and maintenance procedures as outlined in AR 600–55, DA Pam 750–8, DA Pam 738–751, and local SOP.
- (10) Ensure all maintenance significant additional duties and processes have personnel assigned, trained, and documented on appointment orders.

*b. Operator and crew supervisors.* Unit supervisors provide leadership to the operator and crew and support the achievement of the Army maintenance standard by supervising and ensuring operators are present during maintenance periods. Crew supervisors—

- (1) Ensure operators read and understand the local maintenance SOP.
- (2) Ensure operators properly conduct and record faults on DA Form 5988–E or DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
- (3) Ensure that DA Forms 5988–E are turned into maintenance managers per the local maintenance SOP.
- (4) Conduct follow ups with maintenance to get faults repaired or actioned as necessary.
- (5) Ensure that their subordinates fully participate in the performance of scheduled services.
- (6) Attend, lead, and supervise the execution of command maintenance.
- (7) Ensure operators are licensed and technically competent on assigned equipment.
- (8) Know their responsibilities for their areas of supervision and field maintenance operation procedures.
- (9) Enforce the Army maintenance standard for the equipment for which they are responsible, ensuring that the desired sense of ownership applies to subordinate supervisors, leaders, crews, and operators.
- (10) Enforce safety with the operation of equipment.
- (11) Inform their chain of command when sufficient time, personnel, tools, TMs, or other means are not available to accomplish required PMCS and service tasks during maintenance periods.

*c. Operators and crews.* To have a successful field maintenance program that supports mission accomplishment, leaders must start with their operators and crews. Operators and crews must know how to detect and report malfunctions as well as operate equipment properly and safely. An atmosphere of pride and ownership on the part of operators and crews for equipment makes that possible. A disciplined routine and a self-motivated pursuit of excellence help to ensure operators and crews performing PMCS achieve the Army maintenance standard. Operators and crews are the first and most important link to the capture of data necessary for Army maintenance management. Operators—

- (1) Read and understand the local field maintenance SOP and associated external SOPs for units that provide maintenance.
- (2) Become licensed and technically competent on assigned equipment.
- (3) Complete PMCS according to appropriate TM, record faults on DA Form 5988–E or DA Form 2404, and submit to the motor sergeant or MCS in accordance with local SOP.
- (4) Are present for all maintenance that occurs on individually assigned equipment.
- (5) Submit and track equipment that is evacuated with DA Form 2407 (Maintenance Request) issued from local maintenance for submission to support maintenance when required.
- (6) Conduct follow ups with maintenance to get faults repaired or actioned as necessary.
- (7) Report faults that are not repaired properly to leadership.

#### **4–15. Leaders' maintenance self-test**

See appendix E.

## **Chapter 5**

### **Army Maintenance Fundamentals**

#### **5–1. Fundamentals**

Maintenance fundamentals are derived from systems, processes, and programs on daily, weekly, or monthly basis. Fundamentals are described in division, brigade, battalion, and company SOP.

#### **5–2. Process-driven maintenance**

Process-driven maintenance refers to tasks that occur at regular intervals: daily, weekly, and monthly. They need to be managed, tracked, and reported. All impact readiness. SOPs list the required programs and responsibilities of personnel within a formation. Each required program and process that occurs within the organization needs to be addressed.

#### **5–3. Standard operating procedures**

All units performing maintenance are required to have a maintenance SOP signed by the unit commander in accordance with AR 750–1. The maintenance SOP may be an annex to the unit's SOP, an annex to the unit's logistics SOP, or a standalone document. The purpose of the SOP is to describe formally the way a unit performs maintenance on weapons; vehicles; communication equipment; chemical, biological, radiological, and nuclear (CBRN) gear; and other individual and unit equipment. The unit maintenance SOP will be written in enough detail to give recently assigned personnel a firm grasp of how maintenance is to be accomplished in the unit. Personnel should have an opportunity to review it during in-processing. The SOP must contain both supported and organic maintenance according to the unit's structure and capability.

a. Every unit SOP will address safety concerns, determine specific (daily, weekly, or monthly) checks, work procedures, and incident reporting and training requirements to execute maintenance operations. Field maintenance is inexorably linked with safety. The U.S. Army Combat Readiness Center safety web-site is available at <https://safety.army.mil>.

b. See appendix B for details on what SOP should cover.

c. A sample maintenance SOP is available at <https://goordnance.army.mil/>.

#### **5–4. Command maintenance**

Command maintenance is the process in which equipment is identified for PMCS scheduled for action by the leadership. This process begins with PMCS by operators and continues throughout the week with follow-up actions (unscheduled maintenance) by maintainers. Services in the form of scheduled maintenance occur during the week as well. Component 2/3 units operating in non-mobilized or not in a full time status will conduct command maintenance in accordance with their local maintenance SOP.

#### **5–5. Preventative maintenance checks and services**

Operator and crew maintenance is the most critical operation of the Army maintenance system. PMCS is the cornerstone of field-level maintenance. PMCS includes all checks and services performed by the operator, crew, and the field maintenance section. It is a preventive maintenance measure to identify and correct faults as early as possible and perform the required services on all assigned equipment to maintain its useful service life. AR 750–1 states that commanders are required to maintain equipment at operator and field maintenance PMCS standards according to the appropriate TMs. The process of performing PMCS, capturing faults, and performing repairs is called command maintenance. No amount of operator and crew-level maintenance (TM–10 PMCS) can make up for improperly performed field-level scheduled services (TM–20 PMCS). The most efficient field-level PMCS program will not counter the adverse impact of improperly performed operator and crew-level PMCS. Unit commanders and maintenance managers must develop a PMCS program as a unified effort of operator and crew and field-level maintenance checks and services. This complete package can help avoid the adversarial relationship that can develop between operators and maintainers at the field-level. At a minimum, a well-organized PMCS program should include—

- a. The commander's commitment to the enforcement of published guidance on the proper performance of PMCS by operator, crew, and field maintenance personnel.
- b. A training program that ensures leaders, supervisors, and operators are fully qualified and dedicated to performing or supervising PMCS tasks correctly.
- c. Sufficient time blocked in the unit's training schedule specifically for the performance of operator PMCS on a weekly basis.
- d. Sufficient time blocked in the unit's training schedule specifically for the performance of field-level PMCS (–20 level scheduled services) based on time estimates provided by the maintenance officer and NCOIC.
- e. As few unscheduled distractions as possible that take equipment operators, maintenance personnel, and supervisors away during scheduled PMCS periods.
- f. The establishment of strict QC procedures for repairs and scheduled services.
- g. All special tools, lubricants, and publications on hand to accomplish any PMCS task required by the applicable TMs at the field level.
- h. Proper PMCS performance by the equipment operator to ensure early detection of faults and maintenance requirements.

#### **5–6. Types of preventative maintenance checks and services**

- a. *Daily*. PMCS checks that include before, during, and after operations checks.
- b. *Weekly*. Extended checks after daily that need to be completed on a weekly basis. These include the daily checks.
- c. *Monthly*. Extended checks that must be completed on a monthly basis. These include the daily and weekly checks.
- d. *Semiannual*. These checks are used when conducting a semiannual service.
- e. *Annual*. These checks are used when conducting an annual service.
- f. *Biennial*. These checks are used when conducting a biennial service.

#### **5–7. Garrison preventative maintenance checks and services**

- a. Garrison PMCS is usually conducted on the first day of the duty week; however, this weekly requirement is determined by the commander. A monthly schedule should be created that captures all types of equipment throughout the month. While most units always conduct a weekly PMCS on the vehicle platforms, additional items should be added to the schedule each week. An example of additional items would be tents or radio systems. The success of this program requires understanding the capabilities of the maintenance section.
- b. PMCS should be conducted on the first day of the duty week to capture all faults on DA Form 5988–E, get operator parts installed by crews, and ensure parts are on order for the previous PMCS periods. At the conclusion of this day, platoons should roll up and send the data to the company executive officer to give a snapshot of the fleet readiness. Once the executive officer has received this data, the completed DA Form 5988–E must be taken to the company motor sergeant for action. It is good practice to keep track of how many vehicles received PMCS, how many did not, how many need repairs, and how many are being reported as NMC. The motor sergeant will then have the rest of the week to go through DA Form 5988–E, issue workload to the shop foreman, create work orders, and install or order parts. This process cannot be done on the same day as PMCS. There are different ways to work DA Forms 5988–E. Units can prioritize them by reported status, create specific days per platoon, or set periods for maintenance. Because this period cannot be planned in advance, it is called unscheduled maintenance. This process also has to compete with the maintenance priorities of work (see para 5–8).
- c. Units should maximize efforts by having field-level maintainers who are not preperforming PMCS on their organic equipment to support operator PMCS. Some units may schedule PMCS of maintenance sections organic equipment on a day other than command maintenance.
- d. Component 2/3 units operating in non-mobilized or not in a full time status will conduct command maintenance in accordance with their local maintenance SOP.

#### **5–8. Field preventative maintenance checks and services**

This is a period where a piece of equipment is being used for an extended period of time on a dispatch. Because the open dispatch is being used for more than a day, there are different criteria to complete PMCS. The best way to conduct this is with the use of a “running DA Form 5988–E.” A running DA Form

5988–E can be used for multiple PMCS days consecutively on the same document to prevent the need to print new forms each day.

a. *Running DA Form 5988–E.* The TM states the types of checks to be conducted at each interval. PMCS in the field needs to be completed daily with before, during, and after checks. The day is annotated with the date and the letter “D” at the conclusion if no fault was detected. This will continue for 6 days. On the 7th day, a weekly PMCS will be required. The operators will conduct the daily and weekly checks to complete this action. This day will be closed out with the date and “W” in the block. After the 7th day, the PMCS will go back to a “D” each day for the next 6 days. If the dispatch reaches 30 days, a monthly “M” PMCS will be conducted in the same manner. This can continue as long as no faults are detected.

b. *Fault detected and repaired.* When a fault is detected during a running DA Form 5988–E, it is taken to maintenance for repair. The fault is recorded on the DA Form 5988–E. If the fault is repaired, the unit-level maintainer will fill out the portion of the DA Form 5988–E and the running DA Form 5988–E can continue. SOP will determine how long repairs are conducted forward as opposed to being sent back to the UMCP for action.

c. *Fault detected and requires a part ordered.* DA Form 5988–E will need to be validated by the unit-level maintainer and the part ordered. Once the part is ordered, a new DA Form 5988–E will be printed and the running DA Form 5988–E will start again.

## **5–9. Unscheduled maintenance**

Unscheduled maintenance tasks are those that cannot be planned in advance. These tasks can be generated from parts received, validating faults from PMCS periods, or sudden equipment failures. NMC parts received are the highest priority since these items are on the ESR and directly contribute to operational readiness. These parts must be installed immediately in accordance with the local SOP. When PMCS is completed, the field-level maintainer will have a series of DA Forms 5988–E to troubleshoot, install, repair, replace, and order parts. The number of DA Form 5988–E actions varies from week to week. This can be changed to a planned process by creating a plan on what days to work specific sections for validation of DA Forms 5988–E. For example, day 2 after PMCS is captured can focus on first platoons, day 3 on second platoons, and so on. If not planned, these unscheduled tasks need to be added to the daily workload for maintainers to execute. Working through the DA Form 5988–E workload can take many days. The maintenance allocation chart (MAC) identifies what level of maintenance should be working on each type of repair and provides a guide to the amount of time the repair should take.

## **5–10. Scheduled maintenance**

a. Specific TMs list the intervals and types of services that need to be conducted on each piece of equipment. These intervals are used to create maintenance plans in GCSS–Army. The maintenance plans are used to determine the services due at any given time. Vehicles, power generators, radios, optics, weapons, and CBRN equipment are all examples of types that require services. Different pieces of equipment have intervals that can vary by type requiring action. This can be monthly, quarterly, semiannually, annually, biennially, or specific hourly or usage data. The maintenance plan is to be added to the training schedule and conducted according to required dates. There are types of equipment that can have their maintenance plan completed early or late by a 10-percent variance (see DA Pam 750–8) while others do not get a variance (weapons). Because this type of maintenance can be forecast, it is considered scheduled maintenance.

b. Maintenance plans for all equipment need to be evaluated, adjusted, and planned within variance on a yearly basis and in accordance with the unit’s Regionally Aligned Readiness and Modernization Model. This will prevent too many items being due at the same time. Items that can be completed within a few days, such as arms rooms and optics, should be planned for the same periods. This also needs done before and during a deployment and upon redeployment. Company leadership needs to be involved when adjusting the schedule. The schedule must be manageable given the capabilities of the available maintenance team.

(1) Maintenance plans are created from the equipment situation report by clicking the Create/Change Maintenance Plan button. The cycle, type, and intervals can be selected as an option. The GCSS–Army end user manual provides additional guidance on executing transaction codes.

(2) Maintenance plans are viewed using ZMPRPT GCSS–Army Transaction Code.

(3) Maintenance plans need to be added to the unit training calendar.

(4) Conducting platoon-level in-briefs and out-briefs with the command team will ensure that leaders are putting the right emphasis on the execution of the maintenance plans.

#### **5-11. Low usage**

The low usage program is an extended service program that can be executed at the commander's discretion when no other extended service programs are mandated. Services for equipment that have accumulated or are expected to be less than the forecast annual mileage or hours of operation may be placed into low usage service. Use of low usage criteria does not relieve commanders of the responsibility for adequate maintenance of their equipment.

- a. Vehicles are identified and enrolled into this program after receiving the highest level of service in the TM.
- b. This program reduces the services to be performed during the year according to expected use.
- c. Items must be removed from the program and serviced if the limit of hours or miles has been exceeded.
- d. See DA Pam 750-1 for specific criteria on what items can be enrolled in the low usage program.
- e. A fault with a dash symbol is created on DA Form 5988-E to capture the enrollment date and miles upon entry.
- f. Equipment must be exercised and receive PMCS quarterly.
- g. The low usage program can be used during a deployment for equipment that is left behind unit maintained equipment operated and maintained by rear detachment Soldiers.

#### **5-12. Non-combat operations maintenance plans**

Non-combat operations maintenance plans (NCOMPs) more closely align the servicing of equipment on its actual usage rather than time-based intervals. While a time-based interval is still a factor, services are weighted more heavily upon actual usage. Maintenance action messages (MAMs) are published for specific NCOMPs (see para 6-3a(2)). Under NCOMP, operator PMCS requirements and command maintenance requirements remain the same. Exercising the equipment in accordance with the MAM is critical to the successful execution of the NCOMP. In addition to operator PMCS requirements, unit maintainers, in coordination with the crew, will perform a pre-exercise checklist as prescribed.

- a. The PM and the Life Cycle Management Command (LCMC) will approve all NCOMPs through the Army Equipment Safety and Maintenance Notification System in accordance with AR 750-6 and post them in MMIS. Maintainers can use Army Enterprise System Integration Program (AESIP) to access the MMIS application to download the new maintenance plan execution instructions for each piece of equipment. Units that deploy can still remain in NCOMP status. The commander can make the determination of NCOMP status based on the unit's operational tempo for deployment.
- b. Units must adhere to the applicable TM for maintenance actions during deployments. See DA Pam 750-1 for more information on NCOMP.
- c. Units will use the MMIS database to download the NCOMP for specific checks and intervals identified within these plans. Leaders need to train field-level maintainers on the differences from the NCOMP and the normal maintenance checks within the TM.

#### **5-13. Work orders**

Every maintenance action, such as troubleshooting, repairs, parts installation, and services, requires a completed work order that records man-hours, tasks completed, and the unit-level maintainer responsible for direct labor. Work orders that are not completed at the end of the duty day are required to have daily hours logged against them to capture direct labor for that day's work. Once work orders have been created, they can be accessed and managed by using the ZSABER Transaction Code. ZSABER will also allow work orders to be evacuated to a supported field maintenance facility. Maintenance managers can use this to determine daily workload based on the status of the work orders listed as awaiting (C status) and in shop (B status). Work orders should be completed by maintenance NCOs assigned to the proper GCSS-Army role. This will take workload off the clerks and allow them to focus on parts management. GCSS-Army has multiple types of work orders generated from notifications. These are the most common in GCSS-Army:

- a. *PM01*. Maintenance order.
- b. *PM02*. Preventative maintenance order (services).
- c. *PM06*. Project order.

d. *PM07*. Primarily used across Component 2/3 with work performed at TDA maintenance facilities that support MTOE units.

#### **5-14. Evacuation of work orders**

Work orders are evacuated through GCSS-Army Transaction Code ZSABER. Select the Work Forwarding tab, set the system condition status to awaiting evacuation (O Status), then select the work center of the shop to which you will be sending the work order. The receiving maintenance agency will then accept the work order and a subordinate work order will be created. The original work order will have a superior work order number and the accepted job will have a subordinate work order number. This will keep the work order in the main work center of the shop office of the agency you evacuated to.

a. There are two methods for managing work orders once the equipment has been received.

(1) The shop office may keep the work order process in the main work center for status change, ordering, and the closing of work orders. In this instance, a manual process needs to occur each day to update man-hours and status.

(2) The shop office may also send the work order to the actual supported commodity shop completing the work. Maintenance warrant officers managing supported commodity shops can be trained and certified to complete the work order process. Once the work order is complete at their level, it can be sent back to the main work center for closing.

b. Work orders can be closed out at the supporting shop office or evacuated back to the customer unit. SOP will determine how work orders are closed.

c. Work orders are submitted to proper shops for advanced manufacturing. Advanced manufacturing includes additive manufacturing, also known as three-dimensional printing (see AR 750-1 and DA Pam 750-1).

#### **5-15. Parts management**

Parts flow is critical within the maintenance program. Parts that arrive at the SSA and in the customer bin will be reflected with an inbound delivery code within GCSS-Army. This will also be reflected on the VL06I report. Once the clerks receive parts, they will post goods receipt in GCSS-Army to add the item into their inventory. The next step is for the clerks to determine if the material is SSL, a part ordered against a vehicle, or the result of a manual reservation. There are three types of stocks in GCSS-Army.

a. ZV materiel requirements planning (MRP) reorder point with requirements are authorized SSL lines to stock (shop stock). An HQDA G-4 memorandum states how many lines units are authorized to stock as SSL. Authorized ZV lines are produced when units run the demand analysis process (see para 5-18). SSL is generated through consumption of material. When a unit performs a goods movement in GCSS-Army and closes the work order, consumption occurs. Shop stock are demand-support repair parts and consumables stocked within a support-level activity (see AR 710-2).

b. ZM (MRP mandatory) is a shop stock line managed by the unit. A unit is only allowed to stock 10 percent of the authorized SSL lines as a ZM. ZM SSL lines are referred to as command adds.

c. PD (bench stock) are bench stock items. Bench stock are low-cost, high-use consumable items, class II, III (packaged), IV, and IX (less components), used by maintenance personnel at an unpredictable rate. It is important to know that items ordered against bumper numbers will appear as a PD until a goods movement is conducted to the work order. Then the item will be removed from the PD list (see AR 710-2). Bench stocks have a "X" indicator to identify them in the material situation report in GCSS-Army.

d. ZP is a provision for new equipment materials. Items that are identified as ZP need to have their MRP type manually changed to indicate which items these are.

#### **5-16. Shop stock management**

Units authorized personnel, tools, and equipment to perform field-level maintenance will normally have shop stock. To qualify as shop stock, an item must have had at least three demands (material or part) consumed in a control period to add a line and one consumption of that line to retain during the control period. Consumption occurs when a part has had a part goods movement to the associated work order and that work order is closed in GCSS-Army. A control period is 180 days (360 days for Army National Guard (ARNG), United States Army Reserve (USAR), and AMC maintenance depots). Stockage levels will be limited to 30 days. Army commands (ACOMs), Army service component commands (ASCCs), and direct reporting units (DRUs) publish a memorandum on how many lines are stocked by unit type. The unit's shop stock functions are performed by one or more school-trained ERPSs (92A) under the direct

supervision of the ERPS NCOIC of the maintenance administration section or motor sergeant. Accurate SSL inventories are vital to the execution of the parts flow process. The essential daily tasks for managing shop stock are to—

- a. Know which Class VIII and Class IX repair parts are authorized in the unit and in what quantities.
- b. Ensure that stock bin locations and physical quantities on hand match the material situation report in GCSS–Army.
- c. Capture demand history by performing goods movements and the closing of work orders. Demand analysis determines re-order points for ZV SSL. Unit determine safety stock for ZM, PD (bench stock), and ZP. Ensure stocks have initiated a replenishment with GCSS–Army Transaction code ME5A.
- d. Ensure all repair parts are secured in a controlled area with appropriate security measures. Only authorized personnel will have access to stock. Also ensure that repair parts are protected from weather or facility damage.
- e. Ensure that partial parts received are controlled and stored in a secure area to prevent pilferage.
- f. Ensure that excess parts are turned in promptly, in accordance with appropriate turn-in procedures. Parts listed as excess must be available on the material situation report prior to making a ZXS turn-in. Perform MIGO Transaction Code in GCSS–Army to add excess items found.
- g. Monitor the VL06I report for all items that are listed as an inbound delivery at the SSA. Ensure that any materials on the VL06I and not in the customer bin are brought up to the SSA management prior to leaving the SSA that day.
- h. Understand The Army Maintenance Management System (TAMMS) records and ensure parts are issued to the proper bins or customer per work order.
- i. Request, pick up, and receive repair parts.
- j. Put SSL parts into storage in accordance with the bin locations assigned in GCSS–Army.

#### **5–17. Work order parts received**

Parts ordered for vehicles should be issued to maintenance teams after a work order is produced, a goods movement occurs, and a physical log is completed. Maintenance teams need to have temporary physical storage for parts they cannot install when they take possession. They should be organized by bumper number to avoid confusion. Parts can be installed during PMCS periods or later in the week once coordination has been made with maintainers. Parts ordered and received against vehicles will also be installed during equipment services.

#### **5–18. Manual reservation materials received**

Items received as a result of a manual reservation must have a work order created and a goods movement completed, and then be closed for consumption. These actions will remove the items from the material situation report. These can be done all together to clear materials.

#### **5–19. Demand analysis**

Maintenance leaders will complete an SSL quarterly analysis (demand analysis) within GCSS–Army to determine what stock will be retained, deleted, or added. All items that were previously a ZV and determined not to be retained will be automatically adjusted to a PD type of stock when complete. It is up to the unit to turn in these PD lines as excess (ZXS) stock to the SSA. Demand analysis is required semianually for Component 2/3 in non-full time status (see GCSS–Army end user manual available at [https://www.gcass-army.army.mil/gcass-army/eumlaunch/garmy\\_jump1.html](https://www.gcass-army.army.mil/gcass-army/eumlaunch/garmy_jump1.html)).

#### **5–20. Recoverable management**

These are items that are required to be turned in or properly disposed of. The ZOAREP T-Code within GCSS–Army contains the recoverable and repairable list. This can be done by selecting the storage location of the unit you wish to view. The ZOAREP will list items that have been received by the SSA and coded for turn-in. Normal procedures are to have items returned to the SSA within 10 days. The clock on these items begins when the SSA receives the parts, not when the unit completes a post goods receipt and takes physical possession of the part.

- a. There are two types of turn-in documents produced in GCSS–Army.
  - (1) ZRL—items being processed as a turn-in against an item received and have return cost if repairable or recoverable.
  - (2) ZXS—excess turn-in item with no credit value.

b. Items have a recoverability code to determine how to dispose of it and if action is required. This code can be found using GCSS–Army T-Code MM03 (Display Material Information). Items approved for initial issue (ZII) according to local higher echelon SOP will require actions by support operations to remove the turn-in or disposal requirement.

(1) A Financial Liability Investigation of Property Loss will be initiated to account for lost, damaged, or destroyed U.S. Government property, to include items with a recoverability code of “D,” “F,” “H,” or “L” (see AR 735–5).

(2) Items that are ordered “initial issue” require an approval process determined by support operations for execution. These items will not receive a credit when ordered and a purge memorandum will be required. This is SOP-driven.

## **5–21. Technical inspection**

A TI will be performed prior to the repair, evacuation, or turn-in of unserviceable end items or components. TIs are to be performed by technically qualified individuals assigned to a field-level or sustainment-level maintenance activity. Inspections will be performed according to equipment maintenance and serviceability standards applicable to the maintenance level performing the repair. A TI must be performed before a work order is accepted for a shop to perform field-level maintenance.

a. The results of TIs are used to determine—

(1) Completeness and serviceability and verify accomplishment of unit maintenance.

(2) The economic reparability of the item.

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

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

(5) Estimated cost of damage (ECOD).

(6) If all applicable MWOs and SOUMs have been applied. MWOs that have not been applied will be reported to the senior maintenance NCO or officer in charge of daily maintenance operations. Contact the appropriate materiel developer for disposition or additional guidance.

b. Technical inspectors serve as the commander’s QC and assurance mechanism. Inspectors assigned by commanders in accordance with AR 750–1 are accountable to the commander for ensuring that Army maintenance standards are maintained. The inspectors may be assigned to the maintenance control section or to the platoon headquarters, but they represent the commander. Where technical inspectors are not assigned, the section chief bears the responsibility and is accountable to the commander for QA. Technical inspectors will—

(1) Accept work orders as representatives of the supporting unit commander.

(2) Perform QA through all phases of field maintenance operations for a work order.

(3) Conduct normal types of inspections, including the following:

(a) *Initial inspections.* Includes ECOD in conjunction with ERPS clerks and the determination of acceptance of item for repair by the activity. Technical inspectors must report their findings to the MCO and commander, as necessary.

(b) *In-process inspections.* Includes QC. Technical inspectors report their findings of efficiencies and deficiencies to the commander.

(c) *Final inspections.* Determine if end item can be returned to the user and notify the commander of serious deficiencies.

(d) *Verification inspections.* Ensure the accuracy of final TIs when that inspection shows the item remains unserviceable. As a management control, this cannot be performed by the same inspectors who performed the final inspection.

c. Where maintenance activities are divided between a company-level field maintenance team and a FSC field maintenance platoon, the company-level TIs are performed under the auspices of the team motor sergeant or senior mechanic for QA at that level.

d. Technical inspectors must be both technically competent and senior enough in rank to represent the field maintenance unit’s commander to other senior NCOs within the company, senior NCOs and officers from supported units (including battalions, brigades or higher), and the support battalions support operations staff.

e. DA Form 5988–E, DA Form 2404, DA Form 461–5 (Vehicle Classification Inspection), DA Form 3590 (Request for Disposition or Waiver), or DA Form 2402 (Maintenance Tag), whichever is applicable, will accompany all requests for disposition to the national inventory control point. An inspector,



maintenance technician, or maintenance motor officer as specified by the unit commander will verify each request. The TI sheet will accompany the turn-in documentation to the managing national inventory control point so that accurate disposition instructions can be provided for the major end item.

f. When a technical inspector detects damage to an end item or Class VII, Class VIII, or Class IX component through other than fair wear and tear, this damage will be documented on DA Form 5988-E or 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 5988-E will be forwarded to the battalion or equivalent-level commander of the unit that ordered the maintenance work or turned in the damaged end item or Class VIII or Class IX component. The commander will determine if further action will be taken under the provisions of AR 735-5. Damaged property will 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 the requirements in AR 735-5 are satisfied.

g. DA Form 5988-E or DA Form 2408-13-3 will be used to record results of TIs. Follow guidance for processing and retaining work orders for repairs per DA Pam 750-8.

## **5-22. Quality assurance**

QA/QC is a system-based list of verifications and validations that are performed on equipment prior to use or a dispatch. TI and QA personnel need to be trained, certified, and kept on file. The method to qualify and record the training of personnel conducting TI or QA should be discussed in the local SOP.

a. Technical inspectors are part of the QA/QC program. These personnel can be certified per team or a battalion-level section can be created for execution.

b. Local SOP determines which checks and validations occur in the form of a QA/QC list for use or dispatch.

c. A TI needs to be conducted in the form of a QA/QC for the following conditions:

- (1) The work order is closed and the fault repaired.
- (2) Parts are installed.
- (3) Property is turned in.
- (4) Service is completed.
- (5) Dispatch is requested.
- (6) ECOD and actual cost of damages (ACOD) are required.

d. Technical inspectors need to know what the maintenance expenditure limits (MELs) are per equipment type in accordance with paragraph 5-25, AR 750-1, and TB 43-0002 series.

## **5-23. Estimated and actual cost of damages**

When an owning unit suspects that damage to the end item or Class VIII or Class IX component has been caused by negligence or willful misconduct, a work order for the component will be sent to the supporting maintenance activity for determination of the ACOD. After completion of the ACOD, the end item and Class VIII or Class IX component will be turned in or a work order for repair will be created as soon as possible, consistent with the evidentiary requirements of AR 735-5. When the TI supports an investigation of pecuniary liability and actual costs cannot be determined, inspectors will prepare an ECOD on DA Form 5988-E (Equipment Inspection/Maintenance Worksheet). Basic policy guidance for an ECOD in support of a report of survey can be found in AR 735-5.

## **5-24. Combat losses**

The following procedures will be used for equipment lost due to combat:

a. To capture combat loss, units will follow local SOP for procedures and requirements.

b. Property book officers will require that the equipment packet per local SOP accompanies turn-in paperwork prior to assigning a document number.

c. To ensure battle losses are accurately recorded, each month the Coalition Force Land Component Command will reconcile those items reported as uneconomically repairable with Logistics Data Analysis Center (LDAC) Asset Management Section, Equipment Control Record, and Automated Reconciliation.

d. Units will report battle loss equipment as a supply transaction through GCSS-Army and report the loss through the electronic financial liability investigation of property loss process, which is structured per AR 735-5.

## **5-25. Maintenance expenditure limits**

MELs factor in the cost and depreciation of equipment to determine if it is cost effective to repair. Equipment that exceeds the MEL can be processed by supply for a turn-in directive.

a. The TB 43-0002 series will maintain a MEL, which 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 the individual TBs in the TB 750 series (Maintenance Expenditure Limits).

b. The Web Federal Logistics Information System data is used to determine MEL percentage in GCSS-Army wave 2 MEL management.

c. Requests for waiver will be submitted through channels to ACOMs, ASCCs, and DRUs, as ACOM, ASCC, and DRU commanders have one-time approval authority on requests for waiver of published MEL when the required maintenance can be accomplished at field-level maintenance or by local contract. Include all supporting documentation.

d. See DA Pam 750-1 for exemptions to the MEL process.

## **5-26. Dispatching**

Dispatching is performed by the unit dispatcher (ERPS clerk, unit-level maintainer, or operator when no unit dispatcher is available). Operators will perform PMCS on their equipment and document it on DA Form 5988-E. Then the operators will schedule a QA/QC to be performed by the maintenance team inspectors. The inspector will ensure that both -10 checks by operators are completed, -20 level checks are conducted by maintenance, and the vehicle is safe to operate. Once completed, the operator will take the DA Form 5988-E, QA/QC, and vehicle logbook to the unit dispatcher for action. The unit dispatcher will validate the logbook requirements, verify the license, and produce the dispatch for signature by the commander. Dispatches are not valid until signed by a commander or designated representative. It is important to establish dispatching hours for this because of the many tasks the unit dispatcher conducts throughout the day. Prior coordination with the maintenance sections is critical for mass dispatching before a field exercise, range, or operation.

a. The items to be managed in the vehicle logbook include—

(1) DA Form 5823 (Equipment Identification Card).

(2) DA Form 5987-E (Motor Equipment Dispatch (EGA)) and DD Form 1970 (Motor Equipment Utilization Record).

(3) DD Form 626 (Motor Vehicle Inspection (Transporting Hazardous Material)).

(4) DD Form 518 (Accident Identification Card).

(5) SF 91 (Motor Vehicle Accident (Crash) Report).

(6) DA Form 5988-E, when the PMCS is complete.

b. Items recommended for the logbook include—

(1) A strip map to the destination.

(2) A risk assessment.

(3) A unit dispatch policy.

(4) A vehicle load plan.

(5) An operator and track commander license.

(6) A contact card.

c. Commanders and maintenance managers will use the operational procedures in DA Pam 750-8 to plan, manage, and utilize equipment and personnel fully. Field maintenance personnel will record operations per DA Pam 750-8. The procedures used by a unit to dispatch equipment should be tightly controlled and clearly explained in the maintenance portion of the unit's SOP. The detailed steps can vary from unit to unit, but the essential unit dispatcher tasks are to—

(1) Check to see if the operator listed any new faults or deficiencies DA Form 5988-E that require any action.

(2) Check the operator's DA Form 5984-E (Operator's Permit Record (EGA)) to ensure validity for equipment requested.

(3) Ensure that requested equipment is fully mission capable (FMC), no scheduled services are due, and no maintenance actions are overdue by checking ZMPRPT in GCSS-Army.

(4) Check and verify that all operator entries are properly logged on DA Form 5987-E and DD Form 1970.

(5) Ensure that the D1 notification is created and sent to the commander for signature.

(6) Route any DA Form 5988–E submitted by an operator upon return to the motor pool to the appropriate maintenance supervisor. Report any new faults not previously recorded on DA Form 5988–E.

### **5–27. Types of dispatch**

a. *Normal dispatch.* A normal dispatch is signed by a company commander for a period of up to 7 days. This allows commanders to dispatch equipment for a week of operations. Only one driver and one vehicle commander can be allowed per dispatch. An alternate user may be manually entered on a dispatch for use once license verification has occurred. The same driver may not be used on multiple dispatches. An extension needs to be added to use the dispatch longer than 7 days.

b. *Field or training dispatch.* A field or training dispatch is signed by a company commander for the full length of the exercise plus the recovery time on the dispatch. This type of dispatch exceeds the 7-day period of the normal dispatch. These types of dispatches are not used for day-to-day on-post operations. Using the dispatch for longer than the scheduled period requires an extension.

c. *Extended dispatch.* An extended dispatch is signed by a battalion commander. Extended dispatches are for periods when the dispatch period has ended but the vehicle is unable to return to be closed and given a new dispatch. This typically needs to happen during field operations when a scenario keeps the vehicle in use away from the unit for an additional period. Extended dispatch should only be used to return the vehicle to the unit within a set period of time. Local SOP needs to outline how many days a battalion commander can authorize an extended dispatch.

d. *Alert dispatch.* Alert dispatches are used for emergencies or specific training events where the unit needs to move out rapidly. Alert dispatches are printed from GCSS–Army and stay on file until used. Battalion commanders can authorize the use of alert dispatches and company commanders sign the dispatches when authorized for use. It is important to note that using an alert dispatch will bypass GCSS–Army and the QA/QC process by maintenance. Without GCSS–Army, there is no check to ensure that the operators being written on the dispatch are licensed on the equipment. GCSS–Army will not allow operators on equipment for which they are not assigned training during a normal dispatch.

### **5–28. Receipt of equipment**

TAMMS tracks the use of Army equipment. Dispatchers must maintain accurate information for purposes of tracking usage, award of driver and mechanic badges, and responsibility in the event of property damage. If a primary operator must let someone else operate a piece of equipment they have signed for, the primary operator will ensure that additional operators fill out subsequent entries on DA Form 5987–E. Not doing so could leave the primary operator liable for damages incurred when they were neither in physical possession nor control of the vehicle. If the dispatched operator is unable to ensure that the next operator signs for the equipment, the supervisor will ensure the new operator's information is added to DA Form 5987–E. Before someone other than the dispatched operator is allowed to replace the operator, supervisors will check the new operator's DA Form 5984–E or OF 346 (U.S. Government Motor Vehicle Operator's Identification Card) to ensure operator qualifications have been met.

### **5–29. Ground equipment usage reporting**

As part of an organizational inspection program, ACOMs, ASCCs, and DRUs will establish regular, periodic inspections of unit usage data in GCSS–Army against actual equipment odometer or hour meter readings. Inspections will include, at a minimum, usage data validation as well as reporting of inspection results and corrective actions to the next higher command.

a. Units will inspect and validate 25 percent of equipment usage data in GCSS–Army versus actual odometer or hour meter readings.

(1) Active Component units will conduct these inspections quarterly.

(2) National Guard and Reserve units will conduct these inspections semiannually.

b. If usage data on 20 percent or more of the equipment inspected is inaccurate, the unit must inspect and validate 100 percent of all equipment usage data, report inspection results to the next higher command, and update GCSS–Army with the correct usage data.

c. Equipment selected for inspection and validation will be chosen on a random basis and not repeated from one inspection cycle to the next.

d. ACOMs, ASCCs, and DRUs will establish annual GCSS–Army refresher training for all GCSS–Army ERPS clerks and their supervisors. Data trends from GCSS–Army inputs can be utilized to determine where training is required.

e. Commanders at all levels will ensure that equipment operators and their supervisors receive annual training on dispatch procedures emphasizing the importance of properly recording usage data when equipment is returned from dispatch.

f. Operators and supervisors will verify equipment usage data (miles and hours) and update dispatch documentation as necessary during PMCS.

g. Equipment usage dashboards are available in AESIP to assist commands to identify, isolate, and correct errors in usage reporting (see paras 8–7 and 8–8).

### **5–30. Battle damage assessment and repair**

Battle damage assessment and repair (BDAR) is a process that occurs out of necessity prior to calling for recovery assets during equipment failure. The purpose of BDAR is to return disabled equipment rapidly to combat or enable the equipment to self-recover. It is important that the limits of what operators can perform are captured in the local SOP. BDAR can cause further damage if performed improperly.

a. ATP 4–31 and ATP 4–33 provide doctrinal guidance on the use of field-level recovery and repair assets on the battlefield. Practical methods of recovering or repairing disabled or immobilized vehicles due to terrain, mechanical failures, or hostile actions are also addressed in this publication. It is directed toward both the leader and the technician. It lays out how recovery and BDAR assets are employed on the battlefield. In technical terms, it provides principles of resistance and the mechanical applications to overcome them. Equipment rigging techniques and expedient repairs are summarized as a refresher for H8/H9 ASI (recovery-trained) Soldiers and as general guidance for others.

b. Recovery and BDAR are subsets of field maintenance. Both are the owning unit's responsibility and have a fundamental purpose of recovering or returning combat assets to the battlefield as soon as possible. These types of vehicles will be operated by Soldiers who are school-trained in recovery operations (H8/H9 ASI). Low risk BDAR/R procedures will be incorporated in peacetime maintenance training in both field and training base scenarios. Soldiers trained in BDAR/R prior to deployments will have a better advantage in crises.

c. Operator- or self-recovery actions typically involve towing, lifting, and winching. Recovery has a dual function on the battlefield.

d. Recovery will—

- (1) Free equipment immobilized due to terrain, such as mud or soft sand, and return it to the fight.
- (2) Rapidly remove disabled vehicles to a maintenance site for repair.

e. Types of recovery.

(1) *Self-recovery*. Actions taken by the operator and crew to enable their own equipment to return to operation or move to a maintenance location. These actions are initiated at the location where a vehicle becomes mired or disabled. The operator and crew use basic issue items and additional authorized list items to perform self-vehicle recovery. In addition, Class IX BDAR/R kits to aid in recovery and repair operations can be requisitioned a distributed within the unit.

(2) *Like-vehicle recovery*. When self-recovery fails, Soldiers can utilize another piece of equipment of the same weight class or larger to extract or tow the mired vehicle by using any of the following:

- (a) Tow bars.
- (b) Chains.
- (c) Tow cables.

(3) *Dedicated vehicle recovery*. Dedicated recovery vehicles are used when self-recovery or like-vehicle recovery is not possible because of the severity of the situation, safety considerations, or mission requirements. Actions require assistance from a vehicle specifically designed and dedicated to recovery operations.

f. Management of BDAR.

- (1) BDAR is an SOP-driven program for expedient repairs.
- (2) Teams must be trained on procedures to prevent further damage or unsafe conditions.
- (3) There are three classifications of expedient repairs.
  - (a) Expedient repairs that may cause further damage to equipment or cause injury to personnel are classified as “high risk” repairs.
  - (b) Expedient repairs that may cause further damage to equipment but pose no risk to personnel are classified as “medium risk” repairs.
  - (c) Expedient repairs that will not contribute to further damage to equipment or increase the risk to personnel are classified as “low risk” repairs.

(4) Training for BDAR should include some training in recovery techniques (see AR 750–1 for guidance on BDAR training).

### **5–31. Battlefield recovery teams**

Recovery is a process that is utilized upon demand. There are different recovery teams that provide support based upon MTOE, SOP, or tasking from higher echelons.

a. ATP 4–31 provides an overview of the battlefield recovery of damaged equipment. It provides an overview of the methods, techniques, and safety precautions associated with each recovery operation.

b. There are three types of recovery that are available within BCTs.

(1) *Brigade support battalion recovery team*. The BSB has recovery assets used as a backup for battalion recovery and for area or footprint recovery assigned by the division level.

(2) *Battalion recovery team*. The battalion recovery is managed by the MCS within the maintenance control section. It is used in accordance with the unit's SOP.

(3) *Field maintenance team recovery*. FMT have recovery assets to get vehicles from the battlefield to the company area or to the motor pool or UMCP when necessary. These assets should remain with assigned companies during operations.

c. In EAB, the Sustainment Brigade has recovery assets used as a backup for division recovery and for area or footprint assigned by the garrison or a higher echelon of command.

d. It is essential that the SOP details the reporting requirements when making a recovery request. The required information may include—

(1) Type of equipment that needed recovery.

(2) Location of and point of contact for the equipment.

(3) Conditions of the equipment causing assistance.

(4) Does the equipment require a line haul?

(5) The number of operators who need a ride back.

(6) Sensitive items that need to be secured.

(7) In a tactical or deployed environment, consider add security of the area, CBRN considerations, enemy activity, and hazardous materials on scene. These items will be addressed in the unit's tactical SOP.

## **Chapter 6**

### **Maintenance Programs**

#### **6–1. Program-driven maintenance**

Maintenance programs are processes that occur when needed or at time intervals of action per equipment type or tool. Each program has process steps to be executed. All program-managed maintenance is an additional duty assigned to personnel for execution and management. These duties must be documented on a memorandum for the record. Maintenance leaders should use the CMDP checklist to train personnel assigned to these positions. A training memorandum can be completed after the CMDP checks are understood for execution by assigned personnel. This same process should be used for section leaders of CMDP areas (see DA Pam 750–1 for CMDP administrative areas).

#### **6–2. Army modification program**

The Army Modification Program is a coordinated process the Army uses to develop, apply, and document changes in both hardware and software for end items, components, weapons, and information systems. Modification is any alteration, conversion, or modernization of an end item or component that changes or improves the original purpose or operational capacity in relation to effectiveness, efficiency, reliability, or safety of that item (see AR 750–10 and DA Pam 750–1).

a. Modifications are managed through the MMIS application on the Army Enterprise Portal.

b. This program is considered an additional duty recorded on a memorandum for record. The additional duty is for an NCO to action read messages, determine what actions need to occur to complete, and ensure that actions are properly recorded and updated. To check for actions, pull UIC data from the MMIS website. The site will give a listing of equipment that requires a modification action and suspense date. The message instructions on the website will also indicate actions to take.

- c. Field Maintenance has -10 (Operator) and -20 (Maintenance) level MWOs that are completed at the unit level. Units are only authorized to complete field-level maintenance MWOs. Depots are authorized to perform sustainment-level maintenance MWOs.
- d. MWOs are categorized as emergency, urgent, and routine.
- e. A work order must be completed when actions are verified or repaired. This will be taken to the MMIS manager for records and action.
- f. The MMIS manager will update the data in the system.
- g. Maintainers must check the MMIS database for messages during services.
- h. No MWO is authorized for application unless it has an approved MWO number produced by the MWO process in accordance with AR 750–10.
- i. MWO kits and applications are not charged to the user in accordance with statutory requirements as laid out in Title 31, United States Code and interpreted in the Department of Defense (DoD) Financial Management Regulation.
- j. The MWO coordinator, designated by the commander, will ensure the data is transferred from DA Form 2408–5 (Equipment Modification Record) on the MMIS application within the Army Enterprise Portal.

### **6–3. Army Equipment Safety and Maintenance Notification System**

The Army Equipment Safety and Maintenance Notifications System captures and disseminates safety concerns or actions with equipment that needs to be validated or verified. This program requires management as an additional duty by maintenance personnel (see AR 750–6 for policy concerning the Army Equipment Safety and Maintenance Notifications System).

- a. There are several different types of equipment safety and maintenance notification messages.
  - (1) The safety of flight and safety of use (SOU) messages are high-priority notifications pertaining to any defect or hazardous condition or combination of actions, actual or potential, that can cause personal injury, death, or damage to Army-fielded systems where an initial medium to high risk determination (safety condition) has been made per AR 385–10 or an Army-approved risk decision matrix. An initial medium-to-high-risk determination may be reduced to a lower priority safety message as determined by the LCMC Safety Office.
  - (2) The MAM conveys maintenance, sustainment, logistics supply, technical, operational, general maintenance, or sustainment interest information that is not related to safety or used to mitigate risk. The MAM can be used to require the recipient to return notification of receipt to the sender. The purpose is to mitigate negative maintenance, logistics, sustainment, or maintenance operational impacts. These messages may require the accomplishment of a task and a report of completion of findings.
  - (3) The maintenance informational message conveys maintenance, sustainment, logistics supply, technical, operational, general maintenance, or sustainment interest information that is not related to safety and will not be used to mitigate risk. Maintenance informational messages will not be used to require the recipient to return notification of receipt to the sender.
- b. This program is considered an additional duty recorded on a memorandum for record. The additional duty is for an NCO to read messages, determine what actions need to occur to complete, and ensure that actions are properly recorded and updated. The Army Equipment Safety and Maintenance Notification System receives and posts them in MMIS. Reporting requirements for equipment specified in a message are generated and tracked within MMIS.
- c. To check for actions, pull UIC data from the MMIS website. The site will give a listing of equipment that requires a safety validation and suspense date. Actions to take are also on the website within the message instructions.
- d. A work order or memorandum of record can be completed when actions are verified or repaired. This will be taken to the MMIS manager for records and action within the system.
- e. Verification of this database requires validation during services.

### **6–4. Army Oil Analysis Program**

The purpose of the AOAP is to assist unit leaders by providing an oil analysis and report service for combat equipment, aircraft, and watercraft. The AOAP can detect potential equipment component failures, allowing unit leaders to prevent catastrophic failure of equipment by taking prompt action. Specifically, AOAP identifies lubricant conditions through evaluation of equipment oil samples (see DA Pam 750–1).

- a. This program is considered an additional duty recorded on a memorandum for record. The additional duty is for an NCO to turn in samples and action of report results.
- b. Equipment is enrolled into program by type and interval.
- c. The AOAP Lab produces a monthly report that includes due dates and results of submitted samples or data can be pulled using the AESIP AOAP tool.
- d. Once samples are submitted, the following can occur as a result:
  - (1) Normal—results of test indicated no error.
  - (2) Service—change oil, replace filter, then resample after operation.
  - (3) Resample—take a new sample and submit.
  - (4) Maintenance—when equipment is NMC, put in this status so the item is not delinquent.

## **6-5. Test measurement and diagnostics equipment**

TMDE is any system or device capable of measuring or evaluating the specified or operational condition of equipment and components. TMDE identifies or isolates actual or potential malfunctions. The types of vehicles and weapons systems found in motor pools today cannot be maintained properly without the authorized tool sets and TMDE. Commanders, field maintenance managers, and supervisors must ensure that all sets, kits, outfits, and special tools are being used, maintained, and accounted for properly and promptly replaced when unserviceable or lost. Field-level maintainers cannot be expected to properly troubleshoot, remove, or replace components unless the right tool is readily available and serviceable as called for in the equipment TM (see DA Pam 710-2-1 for tool room procedures and AR 735-5 for the policies on accounting for lost, damaged, or destroyed tools issued from tool rooms).

a. TMDE is of little value if not used or calibrated. Some common maintenance items requiring calibration are torque wrenches, multimeters, and simplified test equipment. The accuracy of TMDE will have an effect on the quality of work (see AR 750-43 for more information on the Army's TMDE Calibration and Repair Support Program).

- (1) Users should know the calibration requirements and spot check equipment at random for compliance.
- (2) Per TB 750-25, all activities providing calibration will use DA Label 80 (U.S. Army Calibrated Instrument), DA Label 163 (U.S. Army Limited or Special Calibration), and DA Form 2417 (U.S. Army Calibration System Rejected Instrument).
- (3) Operators and crews must identify which equipment they own has built-in test or built-in test equipment capabilities to assist with field maintenance. The built-in test and built-in test equipment are analysis tools to diagnose data results to isolate faults within the system or systems and may require recalibration.
- (4) If an item is believed to need calibration but is not on the list, verify it in TB 43-180. Ensure the TMDE is being used frequently. The three types of tools commonly found at field level are as follows:
  - (a) Mechanic toolkits consist of common hand tools authorized by the unit table of organization and equipment. These toolkits are based upon the number of mechanics authorized.
  - (b) Standard Army tool sets contain tools and TMDE tailored to field-level sections and are issued from tool rooms and vehicles.
  - (c) Equipment special tools are required for performing field-level maintenance on specific equipment and listed in the applicable field-level repair parts TM.

### **b. Management of TMDE.**

- (1) TMDE is considered an additional duty recorded on a memorandum for the record. A TMDE coordinator will turn in tools and monitor, report, and pick up completed items.
- (2) Part numbers from subcomponent end items are checked within TB 43-180 and TB 750-25 to determine if they must be enrolled into the program. Frequency of required calibration varies by item type.
- (3) See paragraph 8-7 for referencing TMDE reports and datasets.
- (4) TMDE activity produces a report for tolerance and what is enrolled into the program, with the following possible results:
  - (a) CNR—calibration not required.
  - (b) CBU—calibration required before use.
  - (c) In shop—items currently being serviced by lab.
  - (d) Delinquent—items that need turned in or serviced.
  - (e) Evacuated—items sent to another organization for service.
  - (f) Awaiting P/U—items that are complete and ready to be picked up by the unit.

### **6-6. Battery maintenance program**

Field-level and sustainment-level maintenance activities conducting a battery recovery and recharging mission are authorized to inspect, add distilled water (flooded wet-cell only), install, remove, test, and conduct recharging of batteries installed in or on authorized equipment; and properly fill, activate, charge, recharge, issue or reissue, diagnose, test, recover, and temporarily store serviceable or unserviceable batteries and related support materiel.

a. This program is considered an additional duty recorded on a memorandum for record. The battery NCO will receive, issue, and track type of battery and cost of saving of batteries charged. This program is often assigned to the GSE section for action.

b. This program demonstrates cost savings by charging and recovery of low-powered batteries.

c. This program is best managed with the following recommendations:

(1) Create SSL of batteries for use. This will reduce downtime for vehicles that require a battery charge.

(2) Operators will do a one for one swap with the battery section for batteries field-level maintainers have deemed requiring a charge. A work order is then completed for this action. A new battery is not ordered against the work order unless it is determined to be unserviceable by maintenance.

(3) Batteries that take a charge are put back into stock for later use.

(4) Bad batteries are ordered against a GSE work order and put back into stock once received. The original vehicle work order is closed.

### **6-7. Tool program**

Maintenance cannot be accomplished correctly without proper tools. This includes not only MTOE authorized tools but also special tools. Unit leaders should do the following routinely:

a. Tools will be maintained per TM 9-243.

b. Check and ensure that authorized MTOE and TM tools are on hand and replace missing tools promptly.

c. Account for, control, and maintain tools in accordance with AR 710-2 and DA Pam 710-2-1.

d. Prepare a memorandum for the record for additional duty for an NCO or Soldier who can issue and receive tools. The memorandum will also include to whom the tool room custodian is authorized to issue tools.

e. Ensure that tools are inventoried, maintained, signed out, and signed in; and designate who can sign tools in and out.

f. Ensure TMDE items are tracked.

g. Ensure procedures for sign-out are included in the SOP.

h. Use this program for—

(1) Tool room.

(2) Standard automotive tool set.

(3) Forward repair system.

(4) Contact truck.

(5) Any room or area where tools are on hand.

### **6-8. Product quality deficiency report**

Deficiencies that occur due to wrong or damaged material received by the unit's SSA or outside provider require unit actions. The process to receive a replacement item, repair of that item, or refund is completed by submitting a product quality deficiency report.

a. Quality deficiency data, based on objective evidence, is provided by an activity concerning unsatisfactory new or newly reworked (Government or contractor) materiel. The data can be as simple as the originating point's internal report form that initially recorded the deficiency.

b. Of prime importance is the requirement for documentation that is based on direct examination, test, procedural review, and so forth. Personnel must access the Naval Sea Systems Command Product Data Reporting and Evaluation website at <https://www.pdrep.csd.disa.mil/>. A request form must be submitted to obtain access to the website.

c. A product quality deficiency report must be filed when—

(1) The wrong item is received.

(2) Damage is noted upon receipt of an item.

(3) Fails out of the box at installation.



- (4) There are shortages or overages in quantity.
- (5) It has improper or damaged packaging.
- (6) An item fails shortly after installation or before required hours or run time.
- d. Quality deficiency reports are assigned to the following categories for processing purposes:
  - (1) *Category I*. Deficiencies that must be reported within 24 hours—
    - (a) May cause death, injury, or severe occupational illness.
    - (b) Would cause loss or major damage to a weapon system.
    - (c) Would restrict the combat readiness of the using organization.
  - (2) *Category II*. Deficiencies that must be reported within 72 hours do not meet the criteria for Category I.

## **6–9. Safety program**

AR 385–10 prescribes policy and responsibilities to safeguard and preserve Army resources worldwide (including Soldiers, Army civilians, and Army property) against accidental loss. It establishes deliberate risk management as the Army’s principal risk reduction methodology and assures regulatory and statutory compliance. AR 385–10 covers public safety incidents to Army operations and activities. An effective safety program includes the following:

- a. A safety board must be posted in the work area.
- b. Safety must encompass all phases of support operations.
- c. Safety is a command responsibility at all echelons.
- d. The whole effort must focus on providing a safe workplace and culture.
- e. Safety awareness saves lives, time, and money.
- f. Safety rules must be revised as required.
- g. Recognizing requirements for change is essential.
- h. Leadership must be proactive.
- i. There must be a safety SOP to include hazards within the work areas.
- j. Risk management and risk assessment are essential for motor pool operations. DD Form 2977 (Deliberate Risk Assessment Worksheet) should be completed and revised periodically.
- k. Safety markings must be placed where clearly visible in and around the workplace.
- l. The workplace should include ergonomic considerations.
- m. Accident reporting and follow-up procedures must be timely.
- n. Hazard analysis and countermeasures in conjunction with risk management and assessment (including unsafe work areas and compromised systems that create a workplace hazard) and communications of hazards.

## **6–10. Command Maintenance Discipline Program**

The CMDP is a commander’s program that focuses commanders, directors, and supervisors on maintenance management and operations core competencies. The CMDP is a tool to evaluate unit maintenance programs on a day-to-day basis. The CMDP will place emphasis on identifying those areas requiring attention by commanders and the resolution of systemic problems. The CMDP is oriented to combat readiness and sustainability. On-the-spot training and assistance is highly encouraged. The overriding principle of CMDP is that Soldiers and units must be able to maintain their equipment in any environment (see DA Pam 750–1 for CMDP administrative areas).

- a. CMDP coordinators and inspectors should use the most current CMDP checklist available on the U.S. Army Ordnance Corps and Ordnance School website <https://goordnance.army.mil/> or <https://www.milsuite.mil/book/community/spaces/sustainnet/ordnancecommunity/cmdp>.
- b. Divisions can develop internal checklists for tolerance and execution. This is an SOP-driven program (see DA Pam 750–1 for field-level requirements and shop operations requirements).

## **Chapter 7**

### **The Army Maintenance Management Program**

#### **7–1. The Army Maintenance Management System**

The purpose of a unit’s TAMMS operation is to create, maintain, and properly dispose of operational, maintenance, and equipment historical records. The maintenance program captures all data through

automation systems (GCSS–Army), manual forms, key input personnel, filing of documents, and retaining historical data known as TAMMS.

a. DA Pam 750–8 serves as a reference for the performance of field maintenance. A unit's TAMMS functions are performed by one or more school-trained ERPS, MOS 92A. The 92A must be under the direct supervision of the NCOIC of the maintenance administration section or the motor sergeant.

b. TAMMS is either operated manually or automated using GCSS–Army.

c. Maintenance leaders and NCOs who are trained in GCSS–Army may utilize the system when assigned to their proper maintenance role. Maintenance plans and the entire work order process should be performed by maintenance leaders. This will allow the ERPS clerks to focus on parts reception, storage, issue, turn-in, inventories, and dispatching.

## **7–2. Maintenance records**

Maintenance records, with the exception of DA Form 5988–E, differ from operational records because they have little effect on the daily operation of equipment. They are primarily used for scheduling, performing, and managing maintenance on equipment. When faults are identified or servicing is required, field maintenance personnel record and initiate required maintenance actions and reasons for delay as described in DA Pam 750–8. The entire field maintenance section uses maintenance records to track maintenance, perform services, and manage workloads. Therefore, it is essential that field maintenance managers and supervisors regularly evaluate and monitor the flow of information. The most critical tasks that ERPS clerks or maintenance leaders who are completing work orders and maintenance plans must accomplish are—

a. *Maintaining scheduled services.* This means maintaining maintenance plans in GCSS–Army (ZMPRPT) in accordance with scheduled times per TM and variance of last completed service. Supply rooms and other areas in units without GCSS–Army must complete this information and forward it to the field maintenance activity to ensure the development of accurate SSLs and authorized stockage lists. Maintenance managers must be experts on the numerous entries that ERPS clerks must make on this form. The constant updating of scheduled maintenance 20- to 40-level PMCS tasks, lubrication, AOAP, and non-mission capable information is extremely important. If ERPS managers allow the service schedule to become outdated, it becomes difficult to manage scheduled maintenance and adversely impacts the accuracy of equipment readiness rates reported by GCSS–Army.

b. *Managing not mission capable information on equipment.* DA Form 5988–E indicates all uncorrected faults and the reason they have not been corrected. This form requires frequent attention from unit-level commanders and field-level maintenance managers. ERPS clerks must constantly update DA Form 5988–E as new faults are reported by operators and old faults are corrected by maintenance personnel. Equipment operators and maintainers use DA Form 5988–E as a reference when performing field-level PMCS to avoid duplicate reporting of faults that have already been identified and actions that have been deferred. This form is a valuable tool for identifying systemic problems in a unit's maintenance operation. For example, comparing this form against the equipment can reveal inefficiencies in field-level PMCS and the prompt requesting of repair parts. ERPS clerks are the critical link in the flow and disposition of the DA Form 5988–E. In accordance with DA Pam 750–8, DA Form 5988–E annotated with faults is not destroyed until all faults are transferred to another form or corrected. Tight control of the flow of this form once a fault has been entered on it should be thoroughly covered in the unit's field maintenance SOP.

c. *Submitting service packets.* When field maintenance personnel perform scheduled services on a piece of equipment, they should complete and return the following forms as part of the service packet:

(1) A current completed DA Form 5988–E used for field-level PMCS with signatures and corrective action initials, which operators are to submit with equipment to be serviced. DA Form 5988–E must include all actions that were performed at a minimum. This does not include all checks completed, only actions.

(2) The original DA Form 5988–E used for QA/QC to close out service with signatures and corrective action initials.

(3) An updated DA Form 5988–E with all uncorrected faults and parts required entered in GCSS–Army upon completion of the scheduled service.

(4) A copy of the closed DA Form 5987–E or DD Form 1970 for initial and final road tests upon completion of the scheduled service (for motor vehicles only).

(5) A completed work order as part of service packet (DA Form 2407–E or DA Form 5990–E (Maintenance Request (EGA))).

*d. Submitting historical records.* Historical records differ from operational and maintenance records in that most of them provide information to other Army agencies. These records show required information and specific events in the life cycle of a piece of equipment in accordance with DA Pam 750–8. Most of these forms accompany specific components and major end items throughout the life of the equipment. Other historical records are sent to a collection agency rather than being disposed of at the field-level maintenance, such as DA Form 2408–4 (Weapon Record Data). Some of these forms are not kept in hardcopy in units equipped with GCSS–Army. Records will be retained in accordance with AR 25–400–2 and local SOP. The frequently used historical forms that ERPS clerks must maintain are—

(1) *DA Form 2408–4.* This form is used to record the firing and maintenance tasks on weapons with cannon or mortar tubes. Commanders and field-level maintenance managers should review these forms often to check the condition of these forms and the procedures used to enter information on them. Maintenance personnel use information from DA Form 2408–4 to determine the serviceability of cannons and mortars. Incorrect information can cause continued use of unsafe weapons. Regular Army units close out and mail their manual DA Forms 2408–4 to the address in DA Pam 750–8. This is done when the form is full or twice each year on the dates listed. Reserve and National Guard units mail their DA Forms 2408–4 once a year. When DA Form 2408–4 is used for Air Defense Weapons Systems, the form is disposed of per DA Pam 750–8. The electronic DA Form 2408–4 does not have to be mailed. Soldiers can create, edit, and view firing and non-firing data for gun, artillery, and mortar tubes in GCSS–Army or U.S. Army Tank-Automotive and Armaments Command (TACOM) website at Logistics Web Apps-TACOM under the U.S. Army Tank-Automotive and Armaments Command-Unique Logistics Support Applications (TULSA) link.

(2) *DA Form 2408–20.* This form is maintained by ERPS clerks to record every oil sampling action and result of an oil analysis returned by the AOAP laboratory. GCSS–Army will be used to create AOAP notifications and required documents that are tracked down to the specific serial number. DA Form 2408–20 (Oil Analysis Log) is maintained on each component enrolled in the AOAP, as directed by DA Pam 750–8. It is essential that information is kept current on DA Form 2408–20, since it must accompany the component when turned in for repair or rebuild. Additionally, field maintenance managers use this form to identify recurring problems in sampling techniques, indicating a need for additional training. Units that receive the Non-Aeronautical Components Enrolled Report in AOAP no longer maintain this form. If the supporting AOAP laboratory is automated and printouts with all data from DA Form 2408–20 are received, then DA Form 2408–20 is not required.

(3) *DA Form 2408–5.*

(a) This form is used to show published and applied MWOs on all equipment listed in DA Pam 750–8. A DA Form 2408–5 will be initiated only upon notification of the first published DA MWO. The organization that applies the MWO will usually make the entries in this section. It is essential that all MWOs are kept current on DA Form 2408–5 since it must accompany the equipment when it is turned in for repair or rebuild. The electronic DA Form 2408–5 will be a permanent logbook record. Soldiers have the ability to research MWO requirements and applications through the MMIS application on the Army Enterprise Portal, which is where the electronic DA Form 2408–5 can be downloaded and updated.

(b) The commander of the field maintenance operation will designate individuals as MWO coordinator and assistant coordinator to transfer the data from DA Form 2408–5 through the MMIS application on the Army Enterprise Portal.

### **7–3. Publications**

A unit's management of its publications account can enhance or degrade field-level maintenance operations. Operators must have current TMs for proper equipment operation and performance of PMCS. The Army Publishing Directorate (<https://armypubs.army.mil>) is the primary source for publications. Units and activities can use, review, print, and download the electronic version of publications and forms at this site or obtain links to another library. TMs are available in multiple formats and from numerous sources. Paper TMs are available for all operator manuals, wiring diagrams or schematics, firing tables, safety of use and safety of flight TBs, and pre-combat or flight checklists.

a. Field-level maintainers and supervisors must have current field-level maintenance TMs, LOs, TCs, and TBs to properly maintain and service assigned equipment.

b. Maintenance managers need ARs, DA Pams, FMs, ATPs, Army doctrine publications, and supply catalogs to ensure their unit is operating in accordance with Army doctrine and Federal law.

c. To receive publications or blank forms from the Media Distribution Division – St Louis, you must have a valid publications account. If you are opening a new account or updating your current account, you will need to prepare and submit DA Form 12 (Request for Establishment of a Publications Account) through the appropriate installation publications control officer. The publications control officer will then submit the DA Form 12 to Media Distribution Division's customer service email address: [usarmy.stlouis-mo.106-sig-bde.mbx.apdcustsrv@army.mil](mailto:usarmy.stlouis-mo.106-sig-bde.mbx.apdcustsrv@army.mil). DA Form 12 is available on the Army Publishing Directorate's website (<https://armypubs.army.mil>). Digital signatures are required for validation.

d. At a minimum, a field maintenance operation should have the following:

- (1) One operator's manual –10 and LO for each piece of equipment (with posted changes).
- (2) One set of TMs and LOs for each combat repair team and field maintenance team.
- (3) One complete set of TMs, LOs, FMs, TBs, supply catalogs, and ARs for the field maintenance platoon and section headquarters.

e. There should be enough manuals so that maintenance personnel do not need to leave their worksite to use one. AR 25–30 and DA Pam 25–40 provide the maintenance manager with all needed publications information. During change of commands, deployments, and at other times, it may be necessary for units to ensure that all required publications are included in their publications library. A listing of all required publications can be obtained from AESIP. The publications tailored index listing may be ordered by sending an email from a military email account to [usarmy.redstone.ldac.mbx.eopdb@army.mil](mailto:usarmy.redstone.ldac.mbx.eopdb@army.mil). The email must include—

- (1) UIC.
- (2) The maintenance levels performed within your unit. Most requests are for 10- through 30-level operator and maintenance manuals.
- (3) Requestor's full name and rank.
- (4) Requestor's telephone number.

f. Management of the publications program.

- (1) Additional duty for an NCO to order documents and manuals.
- (2) The publications manager orders required publications and forms for unit.
- (3) The publications account is established with DA Form 12 and submitted to the local publications manager for an account.
- (4) 12–R Series is established and reviewed annually.
- (5) The publications NCO can also be assigned as the records manager of ARIMS, which is the required filing system required by the CMDP.

#### **7–4. The Preventive Maintenance Monthly**

Per AR 700–138, *PS Magazine* is intended to enhance materiel readiness by emphasizing preventive maintenance and promoting proper maintenance and supply procedures. *PS Magazine* is a fully-online information resource, available 24 hours a day, 7 days a week at <https://www.psmagazine.army.mil/>. Review of *PS Magazine* will be a regular part of unit readiness initiatives. A reader service is available to answer maintenance and supply questions, as well as receive recommended best practices. Submissions should be emailed to [usarmy.redstone.asc.mbx.psmag@army.mil](mailto:usarmy.redstone.asc.mbx.psmag@army.mil). Each month, an index of articles published to the website is compiled in TB 43–PS Series (The Preventive Maintenance Monthly Index of Online Articles), which can be accessed through the Army Publishing Directorate website or the Electronic Technical Manual (ETM)/Interactive Electronic Technical Manual (IETM) application on the Army Enterprise Portal.

## **Chapter 8**

### **Maintenance Schedules**

#### **8–1. Maintenance workloads**

Maintenance workload comes from unscheduled maintenance tasks and from scheduled maintenance services. Unscheduled maintenance tasks are primarily derived from the results of the command maintenance process and the reception of parts. Priorities of maintenance are the first consideration prior to developing the workload. The workload needs to be determined on a daily, weekly, and monthly basis. Management tracking mechanisms can be used to manage tasks once the workload has been determined.

## **8-2. Priorities of maintenance**

Maintenance has priorities of work. Based on these priorities, work orders can be shifted at any given time.

- a. *Priority 1.* NMC parts received—parts on the ESR that have been received. Safety NMC parts are completed as priority one as well.
- b. *Priority 2.* NMC faults reported—faults determined through PMCS and have been reported as NMC.
- c. *Priority 3.* Safety faults reported—per AR 385-10.
- d. *Priority 4.* Vehicle service—scheduled maintenance tasks. There is only a 10 percent variance to be completed early or late.
- e. *Priority 5.* Anticipated NMC faults—slash faults identified during PMCS.
- f. *Priority 6.* Parts received—parts received and identified not as priorities 1-5.

## **8-3. Developing workloads based on priority**

The workload needs to be determined, tracked, briefed to subordinates, and checked for execution. Maintenance managers have different roles based on position in the execution of the workload.

- a. Work order parts status will change to awaiting shop (C status) when all parts for a work order on the ESR are received and a goods movement has occurred. These will be the first work orders that are assigned to the workload.
- b. DA Forms 5988-E will be turned into the maintenance section after the results of command maintenance occurred. The vehicles that have been identified as NMC are the next items to be added to the workload. It is important to create a work order for each of these vehicles.
- c. Vehicles that are scheduled for services according to the maintenance plans are the next items to be added to the workload. It is critical to identify the day the vehicles are scheduled to enter and exit the maintenance facility as work begins and ends. All parts needing to be installed and work orders on each platform need to be checked and validated during services.
- d. Once NMC parts, NMC troubleshooting, and services are assigned to the workload, slash faults can be actioned. These faults will require work orders per platform as well.
- e. Any program-driven items that are due for action need to be added to the workload as well. This can be a MWO, SOUM, AOAP, TMDE, and inventory or turn-in of parts.

## **8-4. Management tools**

A tracking mechanism that can be used to capture priorities and the multiple different tasks is critical to managing daily, weekly, and monthly operations. The example below is used for weekly maintenance. This example of a tracker is used for multiple companies and the capture of all critical maintenance statistics tracked by higher echelons at all times. This one also puts the priority of these tasks on the top. You can see on the example NMC ESR parts, services, AOAP, reparable and recoverable item management, MMIS (MWO and SOUM), TMDE, evacuated work orders, and DA Forms 5988-E are being tracked. A mechanism like this also allows for the sharing of information to maintenance leaders, platoon leaders, and commanders. Commands are encouraged to develop locally created management tools to supplement procedures required by regulations and to place these tools in their unit SOP for use during training meetings.

## **8-5. Preventative maintenance checks and services DA Form 5988-E tracker**

A PMCS DA Form 5988-E tracker can be used to initially capture the number of DA Forms 5988-E issued and returned by the companies and how many pieces of equipment are being reported as NMC. A DA Form 5988-E tracker can be developed in accordance with the unit's maintenance SOP.

## **8-6. Platform tracker**

A platform tracker can be used for a snapshot of NMC vehicles in the formation. This can be used to determine what is on the ESR, what is being reported NMC, and what is in shop with all parts on hand. The equipment situation report can be exported to easily develop this mechanism. The workload board, tracker by platform, and the DA Form 5988-E tracker can easily capture all the required tasks and priorities required for maintenance. It also makes the program transparent for all who need to know what is going on with current maintenance operations. A platform tracker can be developed in accordance with the unit's maintenance SOP.

### **8-7. The Army Enterprise Portal**

The Army Enterprise Portal is now the single entry point for all AESIP and LDAC applications, available at <https://www.aesip.army.mil/>.

a. Data available from the LDAC Strategic Support Area Business Reporting Environment (SABRE) tab include assets, catalog, data quality, equipping, installation readiness, logistics modernized reporting, organic industrial base, maintenance, my dashboard, publications (such as ETMs and IETMs), resources and supply chain, and TMDE metrics.

b. The maintenance menu provides AOAP, MMIS, and maintenance readiness metrics.

c. Maintenance master data file is in a tab within AESIP. AR 700-138 is the governing policy for readiness reporting of Army equipment and the identification of readiness reportable equipment and systems. AR 700-138 authorizes the use of the maintenance master data file to identify the most current readiness reportable equipment.

### **8-8. Commander's Actionable Readiness Dashboard**

The Commander's Actionable Readiness Dashboard (c@rd) is a suite of materiel management decision support tools geared toward tactical-level users, driving readiness through actionable information. c@rd provides plant maintenance, finance, material management, aviation, property accountability, human resources, warehouse supply, and a training. c@rd is accessed from the AESIP under the BI Launch Pad Tab and GCSS-Army BI Launch Pad.

a. Maintenance data available from c@rd include equipment readiness, fleet management, and shop stock.

b. Maintenance reports available from c@rd include equipment anomalies reports, fleet usage reports, maintenance management metrics reports, manpower reports, notifications reports, readiness reports, shop stock reports, and work orders reports.

### **8-9. Research tools**

The following websites can be used to research the status and availability of material numbers ordered.

a. Parts Tracker is unique with the capability to track materiel by providing updated near-real time status on exactly where a requisition is located, including source of supply, depot, consolidated containerization point, port, SSA, and customer receipt. Parts Tracker provides historical detail of a requisition from the time it is originated at the source of supply to when the customer receives the materiel. Tracker is located on AESIP under the LDAC SABRE tab, Supply Chain drop-down menu, or within the list of applications. Parts Tracker is available at <https://www.aesip.army.mil/>.

b. FedMall provides access to requisitions, research, and tracking tools for Defense Logistics Agency (DLA) inventory. It is an e-commerce ordering system for DoD, Federal, state, and authorized local agencies to search for and acquire products from Government reserves and commercial sources. Buyers will have access to tens of millions of individual items of supply from centrally managed DoD and General Service Administration assets to commercial off-the-shelf products. FedMall is available at <https://piee.eb.mil/>.

c. The Web Visual Logistics Information Processing System (WEBVLIPS) is a web-based, access-controlled query system that is usable from any internet-connected personal computer. It accesses the Logistics Online Tracking System, a Defense Automatic Addressing System relational database system, that portrays the life cycle of a logistics action. The WEBVLIPS customer can track requisitions from their release into the DoD pipeline until the materiel is posted to the accountable records at the destination activity. WEBVLIPS also has the capability to track reports of excess and the movement of those excesses to the destination depot or disposal. WEBVLIPS is available at <https://home.daas.dla.mil/daashome/webvlips.asp>.

d. Distribution Standard System (DSS) Material Tracker is a distribution tool that allows customers to track their materiel requisitions order status using information from the DSS. The DSS Material Tracker is available at <https://dssweb.dla.mil/materialtracker/> (common access card required).

e. The Integrated Data Environment and Global Transportation Network Convergence (IGC) program is a partnership between the U.S. Transportation Command and the DLA. U.S. Transportation Command's Global Transportation Network and DLA's Enterprise Business System have converged to provide DoD with an integrated set of networked, end-to-end visibility, deployment, and distribution capabilities. The end goal of IGC is to effectively support the Joint Force commander's ability to make decisions based on actionable logistics information. IGC creates a single source for DLA and U.S. Transportation

Command to access common, authoritative data, business standards, and information. IGC is available at <https://www.igc.ustranscom.mil/> (common access card required).

f. TULSA is a suite of applications that serve a wide range of users, including all DoD service branch military, civilians, contractors, vendors, and LARs. Commonly used TULSA applications include “Gun Card,” which tracks firing data for weapons; “Demil,” which displays demilitarization instructions for national item identification numbers; and “Safety First,” which hosts and distributes SOUMs, ground precautionary action messages, and additional advisories. TULSA is available at <https://tulsa.tacom.army.mil/>.

g. The Unit Training Assistance Program provides access to training materials specific to hundreds of military vehicles and support equipment systems. These materials assist Soldiers in establishing and maintaining their sustainment training programs, helping to ensure readiness and operational capability is maximized for weapon systems within the unit. The Unit Training Assistance Program is available at <https://utap.army.mil/>.

h. The HQDA G–3/5/7 Bolte Portal allows access to HQDA execution orders in the current and previous fiscal years. The HQDA G–3/5/7 Bolte Portal is available at <https://g357.army.pentagon.mil/od/ex-ord1/forms/allitems.aspx>.

## **Chapter 9**

### **Army Maintenance Technical Skills**

#### **9–1. Technical skills**

Technical skills consist of management tools, GCSS–Army usage, tracking mechanisms, and research capabilities.

#### **9–2. Command-directed reporting requirements**

You must determine what the battalion, brigade, and division reporting requirements are upon arrival at an organization. It is also good practice to determine what critical items the commanders track and want to be briefed on.

a. *Equipment status report.* The ESR is a report that is actioned and managed on a daily basis. Parts that are received need to be installed and vehicles with all parts on hand need to be repaired and removed from the report. Research needs to be conducted for all parts that are on order and not on hand at your local SSA. Maintenance leaders in the maintenance control section need to be familiar with the ESR and be prepared to brief the information contained within the report at any given moment.

b. *Equipment management data.* It is important to know what datasets higher echelons are tracking and what information they require to be briefed. Having the processes in place and the programs that get these datasets executed will make the information easy to brief and manage. Commonly tracked maintenance datasets include—

- (1) Services on vehicles, weapons, CBRN, communication equipment, and optics. Overdue and projections will be identified.
- (2) Recoverable and repairable items must be returned to the SSA. The items that have exceeded 30 days and have the highest dollar value for turn-in need to be identified as a priority.
- (3) SOUMs and MWOs. Overdue actions will be identified.
- (4) AOAP items. Overdue and projections will be identified.
- (5) TMDE. Overdue and ready-for-pick-up will be identified.
- (6) ESR items over 30 days and Equipment Readiness Code P (Pacing) will be identified.

#### **9–3. Global Combat Support System–Army management**

It is critical that maintenance leaders and clerks know and understand roles, processes, and the proper transaction codes in GCSS–Army. ERPS clerks manage all parts reception, turn-in, and issuing from the SSA to the users and unit-level maintainers. Clerks are also responsible for the inventory, labeling of parts locations, and tracking on parts issued. Because this is a long process that takes hours of completion each day, it is best to have the maintenance NCOs complete the work order process in GCSS. This includes having the maintenance NCOs complete the ordering function on work orders. When parts are issued to unit-level maintainers, the clerks will complete the goods movement and the maintenance NCOs will close the work orders when complete. To facilitate the different roles of GCSS–Army tasks by the proper personnel completing actions, multiple maintenance positions for use by field-level maintainers

and leaders have been established in the system. Accurate SSL is the number one priority within GCSS–Army. Incorrect stock listed will impact the ordering and reception process (see app E for a list of commonly used T-Codes).

#### **9–4. Global Combat Support System–Army positions and users**

Specific roles in GCSS–Army are listed in the positions and users report for a specific UIC input with the ZAMW transaction code.

*a. Unit level.*

- (1) Maintenance access admin.
- (2) Equipment parts specialist.
- (3) Maintenance manager.
- (4) Maintenance supervisor.
- (5) Business display all.

*b. Support operations level.*

- (1) Maintenance support operations access admin.
- (2) Maintenance support operations manager.
- (3) Maintenance support operations supervisor.
- (4) Maintenance ZPARK.

*c. Enabling roles that are non-maintenance managed but required.*

- (1) Commander's representative.
- (2) Master driver.
- (3) Unit supply clerk.
- (4) Unit supply hand receipt.
- (5) Unit supply NCO manager.
- (6) Business display all admin.
- (7) Business display all.

*d. Roles are located within the positions and users report which provide command and control over assigned UIC and work centers. This is what allows maintainers to perform maintenance and complete transactions within GCSS–Army. These are listed in the related Force Element (FE) and related FE B290 relationship tab located on the top of the report.*

*e. If maintainers are not able to perform transactions for maintenance in GCSS–Army, the FE B290 relationship needs to be adjusted and the UIC desired to be used needs to be added by the brigade property officer. The brigade property officer manages FE B290 relationships.*

*f. If a maintenance section is assigned an additional unit for maintenance organization maintenance support, the FE B290 relationship needs to be adjusted with that customer UIC.*

#### **9–5. Ordering and budgeting with Global Combat Support System–Army**

Requisitions are completed through a work order or a manual reservation. The requisition will then go to the GCSS–Army T-Codes ZPARK and ME5A report. The ZPARK is used at the support operations level to approve or disapprove requisitions and the ME5A is for company or battalion visibility of orders. This will generate a purchase request, 10-series code in GCSS–Army.

*a. The support operations will validate the ZPARK for budget constraints, quantities ordered, and proper ordering of material by units. There are nine business rules for ordering of material within the ZPARK. Orders that violate a business rule will be given a release code and be sent to the release strategy for review once funded. These items will not be released as a purchase order (PO) to the SSA until approved by the release strategy manager in support operations. Items in the release strategy that are deemed not to be valid orders will be ZCANCELED by the release strategy manager. It is upon units to delete reservations deleted by support operations at their level when this occurs. Failure to delete an item as a result of ZCANCEL will populate again the next day. Component 2/3 will follow local SOP for ZPARK.*

*b. Release strategy codes.*

- (1) A1- Automatic data processing computer equipment (FSC 7010).
- (2) B1- Controlled material numbers (national item identification numbers).
- (3) C1- Order dollar limit restrictions.
- (4) D1- Order quantity limit restrictions.
- (5) E1- Acquisition advice code.



- (6) F1- Controlled inventory code.
- (7) G1- Reportable item category code.
- (8) H1- Accounting requirements code.

c. Once support operations validates the ZPARK, it is sent to the S8 for funds approval. Once funds are available, the support operations can pass requisitions for order. At this time, the release strategy manager can review and pass items as well. Once the order is funded and released, this will generate a PO, 71 series code in GCSS-Army. There will be a matching document number to the PO that will start with the unit Department of Defense activity address code (DoDAAC).

d. The item will then go to the local SSA to be filled. If the item is on hand, it will be processed and placed into the customer bin. If the SSA does not have the item, they will order it and a next higher level PO, 45 series code in GCSS-Army. The 45 series PO will have a matching document number that will start with the SSA DoDAAC.

e. The ordering process is visible using T-Code ZEDF in GCSS-Army.

f. The associated document numbers with the 45 series code can be researched external to GCSS-Army for further shipping information.

g. Units should review the ME5A and action errors on a daily basis prior to the support operations sending out the ZPARK. Only support operations can produce the ZPARK.

### **9-6. Managing non-mission capable equipment**

It is critical to identify NMC equipment when PMCS is completed and the results have been reported to maintenance. These items need to be diagnosed and repaired as unscheduled tasks immediately. Field-level maintainers should attempt to resource parts internally and externally prior to ordering and requesting material numbers. Resourcing parts or repairing NMC vehicles should be the main focus of the shop foreman, motor sergeant, and the MCS. Items must be validated for the proper acquisition advice code and the usable on code along with potential locations for reception before ordering. There are times when parts are backlogged in the system and ordering a higher assembly is required. Once all avenues are exhausted, then parts must be ordered properly and added to the ESR.

### **9-7. Building combat power**

Building combat power involves stewardship and prioritization of maintenance activities in garrison and field environments. This process requires expert knowledge of the equipment and how to have as many platforms combat ready as possible.

### **9-8. Controlled exchange**

a. Controlled exchange is the removal of serviceable components from unserviceable, economically repairable end items for immediate reuse in restoring a like item or weapon system to an FMC condition. This process is used to generate combat power or increase unit's operational readiness rate. Controlled exchange is authorized only when—

- (1) Two or more similar platforms are NMC.
- (2) Required components are not available from SSL, authorized stockage list, or source of supply.
- (3) A valid requisition is generated against the end item that the material was removed.
- (4) The unserviceable material will be installed on the donating end item until serviceable material is received.
- (5) 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.
- (6) The work order process in GCSS-Army must be completed to capture the controlled exchange process.
- (7) Approved by the commander of the organization performing the controlled exchange. SOP will determine how this approval is given. In some units, a higher echelon SOP may determine the number of items to be exchanged from a platform and the approval process or authority.

b. Refer to DA Pam 750-1.

### **9-9. Unit maintenance control point**

The relationship with the maintenance control section and the platoon leadership is essential for field operations. Convoys to locations, guard points, guard rosters, entry, exit points, meal, fuel, and reporting are all functions of the platoon leadership. The maintenance control section will manage maintenance

operations within the set space for operations. Crews will replace maintainers on guard duty until repairs are complete.

### **9–10. Managing battlefield maintenance**

When a shift or change in priorities could provide a greater overall effect, the maintenance manager takes appropriate action or makes recommendations through the chain of command. In a similar manner to the maintenance planning process above, the maintenance manager must identify the resources on hand and those already committed to meet identified requirements. Staffs manage available resources within the established support framework to return the maximum number of items to FMC status (see ATP 4–33).

## **Chapter 10**

### **External Support at the Brigade Level**

#### **10–1. Field level and below maintenance procedures**

a. Leaders must implement the policies contained in AR 750–1, the procedures contained in DA Pam 750 series and DA Pam 738–751, the automated processes contained in GCSS–Army, and in succeeding generations of maintenance Army Logistics Information System. Each level of command has its assigned and implied responsibilities.

b. The BSB headquarters contains the command and control elements for the BCT maintenance organization, including the support operations officer, senior maintenance warrant officer, support operations NCO, MCO, and MCS.

#### **10–2. Support operations**

The support operations officer is responsible to—

- a. Synchronize and coordinate the brigade maintenance program for the brigade commander.
- b. Make a formal assessment of the brigade maintenance mission.
- c. Monitor the brigade maintenance workload to support the commander's mission.
- d. Provide the brigade commander with equipment status for all brigade units. Accuracy here depends on the accuracy and timeliness of unit reports. The support operations officer fully understands materiel and unit equipment status reporting and ensures that all reporting units within the brigade comply with reporting requirements in AR 220–1 and AR 700–138 and as supplemented by DA Pam 750–8 and DA Pam 738–751.
- e. Ensure that maintenance records are recorded in GCSS–Army and updated in the system properly.
- f. Evaluate the overall brigade PMCS operation.
- g. Enforce the Army Maintenance Standard within the brigade.
- h. Assist the commander in planning tactical maintenance support.
- i. Coordinate with external support maintenance organizations.
- j. Ensure TMs and LOs are available to brigade units.
- k. Assess training and competence level of brigade operators, crews, and maintenance personnel.
- l. Request support from the AMC LAR.
- m. Provide the commander with accurate equipment status for all units.
- n. Manage materiel and unit equipment status reporting.
- o. Prioritize the battalion maintenance effort to support the commander's mission.
- p. On behalf of the battalion commander, and at least annually, make the assessment of the support battalion's maintenance capabilities against the maintenance mission.
- q. Supervise the operation of GCSS–Army reporting and accurate data entries.
- r. Monitor field maintenance evacuation to EAB when available and to the LRC to accomplish field maintenance tasks. ARNG units will continue to coordinate their external maintenance support through the surface maintenance manager to a surface equipment maintenance facility.

#### **10–3. Support operations senior maintenance warrant officer**

The support operations senior maintenance warrant officer—

- a. Fulfills the role of technical expert in maintenance operations for the brigade.
- b. Assists the support operations officer.

- c. Monitors the scheduling and performance of equipment services.
- d. Monitors the brigade QA program.
- e. Implements and monitors the maintenance, SOUMs, MWOs, warranty, calibration, and oil analysis programs within the brigade.
- f. Plans and conducts technical training for maintenance personnel.
- g. Assists unit commanders in setting up PMCS training programs.
- h. Monitors the flow of brigade work requests to external support maintenance organizations and ensures that requested repair cycle time is achieved.
- i. Coordinates the use of unit recovery assets.
- j. Coordinates requirements for external support teams with a supporting sustainment maintenance provider organization.
- k. Develops unit-level SOP.
- l. Tracks all required maintenance statistics within the brigade. Chairs meetings for data. Provides actions directed by the brigade or BSB commander.
- m. Manages brigade-level ESR.
- n. Works with external agencies for backorder parts.
- o. Plans and coordinates for execution of MWOs by depot (50) level and higher.
- p. Provides input for current and future operations.
- q. Communicates maintenance data to higher echelons.
- r. Conducts CMDP inspections of subordinate units.
- s. Monitors all GCSS–Army processes for accuracy.
- t. Monitors and actions ordering requisitions through the ZPARK and release strategy.
- (1) Ensures all material requisitions are processed through GCSS–Army.
- (2) Monitors the flow of material requisitions to the SSA and ensures that required delivery date timelines are achieved.
- (3) Takes actions against backordered requisitions.
- (4) Implements and approves procedures for manual requisitions when GCSS–Army is offline.
- (5) Ensures that brigade maintenance personnel submit supply requests using DA Form 2765–1 (Request for Issue or Turn-In) and DD Form 1348–1A (Issue Release/Receipt Document) and makes pickups in accordance with SOPs.
- u. Monitors services tolerance by units.
- v. Provides training or training resources for personnel when required.
- w. Provides talent management recommendations, personnel movements, and officer slate information to the commander.

#### **10–4. Support operations noncommissioned officer**

The support operations NCO—

- a. Executes and supervises the mission by assigning tasks.
- b. Assigns work to the various sections.
- c. Supervises Tactical Enterprise Logistics Systems (TELS) and TAMMS and supply procedures.
- d. Supervises QC inspectors.
- e. Enforces safety standards within the brigade's maintenance operations.
- f. Coordinates directly on support issues with installation support organizations.
- g. Submits work requests to the installation facilities engineer, when required.
- h. Coordinates and monitors the brigade TMDE calibration requirements.
- i. Tracks all required maintenance statistics within the brigade. Chairs meetings for data. Provides actions directed by the brigade or BSB commander.
- j. Works with external agencies for backorder parts.
- k. Coordinates the execution of MWOs.
- l. Communicates maintenance data to higher echelons.
- m. Conducts CMDP inspections of battalions.
- n. Monitors all GCSS–Army processes for accuracy.
- o. Monitors and actions ordering requisitions through the ZPARK and release strategy.
- p. Monitors services tolerance by units.
- q. Provides training or training resources for personnel when required.

#### **10–5. Maintenance relationships**

These organizations are higher echelons for reporting and external support agencies. The division sustainment brigade, division headquarters, Army field support brigade (AFSB), AFSBn, LCMC, and LAR all provide external logistical support.

#### **10–6. The sustainment brigade**

The sustainment brigade is a multifunctional headquarters integrating and employing all assigned and attached units while planning and synchronizing sustainment operations. It is the Army's primary brigade-level sustainment headquarters. The sustainment brigade supports Army forces at the tactical and operational levels, providing support to BCTs, multifunctional and functional support brigades, deployable, self-contained division and corps headquarters, and other units operating in its assigned support area. Depending upon operational and mission variables, the sustainment brigade commands between three and seven battalions. Sustainment brigades are usually assigned or attached to a division, expeditionary, or theater sustainment command. The division sustainment brigade and its attached units will normally have a general support relationship with supported organizations (see ATP 4–93).

#### **10–7. Division headquarters**

The division commands multiple Army brigades and is the Army's primary tactical headquarters for decisive action. When required, it may serve as a joint task force or joint force land component headquarters in a limited contingency operation. As required, the division may be the Army component and the joint force land component within a joint task force. Its principal task is directing subordinate brigade operations. Divisions are not fixed formations. They may control more than one type of BCT. A division can control up to six BCTs with additional appropriate multifunctional supporting brigades. In most cases, deployed sustainment brigades will have a command relationship with a sustainment command and a support relationship with a division (see ATP 4–93).

#### **10–8. Army field support brigade**

AFSBs are assigned to the Army Sustainment Command and are normally regionally aligned to an ASCC or corps. Corps-aligned AFSBs are in direct support to their corps at home station and form a corps logistics support element operational control to the corps when deployed. The AFSB's mission is to provide the AMC national-level sustainment support to deployed forces, including sustainment maintenance and Class VIII or Class IX repair parts distribution. The AFSB may also provide field maintenance support for deployed forces as required. The AFSB support operations section is responsible for all external sustainment functions and coordination with the appropriate AMC subordinate command or LCMC to meet mission needs (see FM 4–30).

#### **10–9. Army field support battalion**

AFSBns are deployable AMC TDA organizations. Direct support readiness AFSBns are in direct support to their division at home station and form a division logistics support element operational control to the division when it deploys. Theater AFSBns and Army prepositioned stocks AFSBns remain under AFSB mission command. AFSBns have tailored capabilities that support Army equipment operational readiness through prioritization, integration, and synchronization of AMC's national-level provider efforts. They also assist in the coordination and synchronization of actions in their designated mission support area. The LARs assigned to the AMC LCMCs—Aviation and Missile Command (AMCOM), Communications-Electronics Command (CECOM), Joint Munitions and Lethality, and TACOM—are the core of the Logistics Assistance Program and are the central part of the AFSBns. The AFSBn's primary contingency mission focus is supporting deployed Army weapon systems, support systems, and other Army systems as required (see FM 4–30).

#### **10–10. Logistics readiness centers**

LRCs provide backup home station sustainment and power projection support once all other means of support are exhausted. LRCs are integral to installation daily operations, deployment of forces from power projection platforms, and mobilization force generation installations. AFSBs provide command and control of LRCs operating within their designated support area with the exception of Aviation LRCs, which are under the command and control of AMCOM. LRCs provide logistics support to all units located on an installation and units operating within the LRC's designated support area (see ATP 4–98).

### **10–11. Life cycle management command**

LCMCs provide material development, acquisition, and sustainment. Five separate LCMCs cover all Army materiel: AMCOM, CECOM, TACOM, Joint Munitions and Lethality, and Army Medical Logistics Command.

### **10–12. Logistics assistance representatives**

LARs, the technical building block of the AFSB, are Department of the Army Civilians with specialized training on specific supported equipment. LARs provide systems-oriented supply and maintenance technical assistance to Army units. LARs have substantial experience on the equipment they support and provide answers to maintenance, training, supply parts, and operational readiness questions. LARs also take an active role in educating and training Soldiers and may perform hands-on maintenance to resolve unique readiness situations or to effect substantial cost savings, subject to approval of the appropriate LCMC. LARs belong to their specific LCMC, but are attached to AFSB or AFSBn. Types of LARs include—

a. AMCOM LARs who provide support for the following systems (see ATP 4–98):

- (1) Ground Missile Systems.
- (2) Air Defense Systems.
- (3) Multi-Missile Systems.
- (4) Attack Aircraft Airframe (AH–64D/E).
- (5) Attack Airframe Electronics (AH–64 D/E).
- (6) Utility Aircraft.
- (7) Medium Aircraft.
- (8) Cargo Utility Aircraft Electronics.
- (9) Multi-Aviation Systems Airframe.
- (10) Unmanned Aircraft Systems (Gray Eagle/Shadow).

b. CECOM LARs who provide support for the following systems (see ATP 4–98):

- (1) Power generation and environmental systems (P&E).
- (2) Information Technology Radio.
- (3) Information Technology Switch.
- (4) Long Haul Transmission.
- (5) Sensor (Radar).
- (6) Logistics Information Technology and Mission.
- (7) Intelligence and Electronics Warfare.
- (8) Avionics.

c. TACOM LARs who provide support for the following systems (see ATP 4–98):

- (1) Combat Support/Combat Service Support.
- (2) Ground Combat Systems.
- (3) Soldiers and Chemical/Biological.

d. Joint Munitions and Lethality ammunition specialist (see ATP 4–98).

e. Army Medical Logistics Command management of Class VIII medical equipment and supplies.

## **Chapter 11**

### **Command Considerations**

#### **11–1. Commander's responsibilities**

Additional command responsibilities are outlined in paragraph 4–14.

#### **11–2. Maintenance standards**

To achieve the operator and field maintenance PMCS standards required by AR 750–1, maintenance managers should focus on the following:

- a. The unit commander's maintenance requirements for accomplishing the unit's tactical mission.
- b. Recommending equipment maintenance goals and objectives to the commander responsible for the maintenance of assigned equipment.
- c. Assisting the unit commander in the planning of operator, crew, and field maintainer equipment sustainment training.

- d. Managing resources (for example, money, people, time, and materiel).
- e. Reporting accurate readiness.
- f. Recommending improvements to TAMMS.
- g. Evaluating the constant performance of functional areas of field maintenance.
- h. Performing high quality field-level PMCS using the applicable equipment TMs.
- i. Integrating safety into all tasks associated with field maintenance.
- j. Reporting usage accurately.

### **11–3. Manpower**

a. If unit commanders determine the workforce is insufficient to accomplish the mission, they may request through their higher headquarters additional maintenance and logistics capability when the workload at the EABs or LRC cannot support additional maintenance operations for 90 days or longer. Support for this capability must be through AMC, ARNG and Army Reserve maintenance activities, Army contractor logistics support, or other Army maintenance units and activities off installation.

b. If contract personnel become available to augment Soldiers, they will work under the close supervision and coordination of unit maintenance leaders and commanders to maximize efficiency and promote teamwork.

### **11–4. Maintenance equipment**

Maintenance requires materials, critical tools, parts, TMDE, and facilities or specific work areas to conduct proper repairs and conduct services.

a. *Repair parts, repair kits, service kits, and general maintenance supplies.* These are hardware supplies and assets that commanders must provide to achieve and sustain the maintenance mission.

b. *Test equipment.* Refer to AR 750–1 and AR 750–43 for additional information.

c. *Maintenance facilities.* These structures are significant maintenance enablers and centers of production that ensure the unit meets the maintenance and readiness standards. Commanders should work closely with garrison officials to ensure the installation maintains buildings, hardstands, sheds, utilities, and waste and environmental systems.

### **11–5. Establishing maintenance priorities**

a. AR 750–1 contains an in-depth explanation of maintenance priorities for garrison, pre-mobilization, and pre-deployment operations regarding urgency of need designators and force activity designators.

b. Army maintenance tasks and operations will be conducted in established maintenance mission priority sequence.

c. Commanders will establish maintenance priorities based on mission, enemy, terrain, troops, time, and civil considerations.

d. Normally, priorities will be derived from higher headquarters operation orders and logistics plans.

e. Maintenance priorities can change during each phase and sub-phase of a tactical operation.

f. There is no set length of time that a phase can last. Using Operation Desert Shield and Desert Storm as an example, some phases, normally pre-operations, can comprise days, weeks, or longer, while phases and sub-phases of the battle may be hours or even a few days.

g. Maintenance Soldiers need to understand that their priority of work can change as a result. The shop office is responsible for managing this workload for the shop. While this probably will not be an issue where field maintenance is performed by either organic support or FSCs that are operational control to the supported unit, units that receive their field maintenance on an area support basis might be affected.

h. Maintenance managers and ERPS clerks document equipment changes in the automated reporting systems.

## **Chapter 12**

### **Training and Licensing**

#### **12–1. Training objectives and resources**

a. Effective training is the key to success, and many resources are available to guide the organizations maintenance training program, including—

- (1) Soldier manuals.

- (2) Leader books.
- (3) FMs.
- (4) Mission training plans.
- (5) Training circulars (TCs).
- (6) TMs.
- (7) TBs.

b. There is no single formula for successful unit maintenance training, but there are four broad objectives that all effective maintenance training programs strive to achieve.

(1) Increase the technical skills of Soldiers and unit-level maintainers, including cross-training and on-the-job training. Ensure that maintenance MOS-related training is being conducted using proper tools.

(2) Make maximum use of time for technical training. Integrate operators and crews into the training program.

(3) Develop Soldiers' skills and focus these skills on successful maintenance operations.

(4) Ensure Soldiers review the units' mission training plan.

(5) Determine if operators and crews perform accurate PMCS and properly document uncorrected faults that reflect the true condition of their equipment. This will require inspection of a sample number of DA Form 5988-E.

c. MOS training is important. Commanders must properly utilize personnel who received specialized training.

d. Ensure specific database entry and research systems training is conducted as required.

e. See AR 350-1 for proper methodology on establishing training programs.

## **12-2. Training challenges**

a. External challenges and how they are managed can spell success or failure to a maintenance training program. Some external factors the commander cannot influence are as follows:

- (1) Personnel turbulence.
- (2) Skill shortages.
- (3) Leader experience.
- (4) Complexity of equipment.
- (5) Soldier experience.
- (6) New equipment training.
- (7) Other maintenance distractions.

b. Internal challenges can be influenced by commanders. Their effects can be minimized to ease the effects of external challenges. Internal factors and distractions include—

- (1) Workload.
- (2) Lack of operator maintenance.
- (3) A poor maintenance training plan or none at all.
- (4) First-line leaders not involved in maintenance operations.
- (5) First-line leaders with little or no maintenance training.
- (6) Little or no operator and crew maintenance training.
- (7) Personnel not having or using maintenance publications.
- (8) Improper use of assigned personnel.
- (9) TMDE or AOAP not being used.
- (10) Poor QC procedures.
- (11) Available training assistance not being used.
- (12) Technical experts not consulted to resolve issues.

## **12-3. Additional information requirements**

a. The company commander or unit commander must verify the level of knowledge that equipment operators and their leaders have about the status of equipment and the ability of the operators to perform maintenance.

b. All units must have their own testing and training programs.

c. All personnel require equipment and inspection process training to be effective.

d. The leader must know what the operator knows about performing PMCS and the capability of the operator's equipment.

- e. When additional training is required, the leader should provide the training or advise the unit commander that training assistance is needed.
- f. Continual testing and training must be provided to instill confidence and improve competence of assigned personnel.

#### **12-4. Improve maintenance training**

- a. Consider the following methods in improving maintenance training:
  - (1) Analyze the unit's maintenance training.
  - (2) Develop a maintenance training plan from the analysis.
  - (3) Identify personnel skill shortfalls and the available training courses.
  - (4) Train leaders to supervise and conduct the necessary maintenance training.
  - (5) Train first-line leaders in inspection techniques for their equipment as well as its operation.
- b. Leverage both formal and on-the-job training assistance from external sources, such as—
  - (1) Maintenance assistance and instruction teams.
  - (2) Sustainment maintenance units.
  - (3) AMC LARs.
  - (4) Exportable training packages.
  - (5) Command maintenance evaluation and training teams.
  - (6) Installation troop schools.
  - (7) Field service representatives.
- c. Maintenance begins with the equipment operators, so commanders who invest time in operator training will receive dividends in equipment availability.

#### **12-5. Equipment operator licensing**

Instructions for completing licensing of vehicle operators should be incorporated in the unit SOP. The equipment operation licensing program is supervised and managed by the brigade and battalion S-3 and AR 600-55 provides the basic requirements for a good licensing program. Use TC 21-306 (track vehicles) for additional information on licensing vehicle operators.

- a. Commanders retain responsibility for the licensing of their assigned Soldiers.
  - (1) Designate, in writing, an individual to certify drivers testing.
  - (2) The maintenance support team providing dispatcher support will have a copy of the memorandum.
  - (3) Leaders are responsible for ensuring their subordinates can operate assigned equipment.
- b. Include instructions for completing licensing of vehicle operators in the unit SOP. Use TC 21-305 series (wheel vehicles) for additional information on licensing vehicle operators. The SOP will also address the requirements for driver and operator badges outlined in chapter 14.
- c. Record contract personnel qualifications into GCSS-Army upon validation of the contractor or military technician certification memorandum.

### **Chapter 13**

#### **Awards**

##### **13-1. Driver and mechanic badges**

- a. Unit commanders are responsible for establishing and maintaining the program for awarding driver and mechanic badges. AR 600-8-22 provides the guidance for the award of badges for field-level maintainers, drivers, and operators. Although it is one badge (Driver and Mechanic Badge), Soldiers and civilians will receive different component bars depending on whether their duties were to drive, operate, or fix Army equipment. Personnel can receive multiple component bars as appropriate.
- b. Appurtenances available are as follows:
  - (1) Driver-W for wheeled vehicles.
  - (2) Driver-T for tracked vehicles.
  - (3) Driver-M for motorcycles.
  - (4) Driver-A for amphibious vehicles.
  - (5) Operator-S for special mechanical equipment.
  - (6) Mechanic for automotive or allied vehicles.



- c. Approval authority pertains to commanders of brigades, regiments, separate battalions, or any commander in the rank of lieutenant colonel or higher.
- d. Unit commanders should forward requests through personnel channels to the appropriate commander as outlined above.

### **13-2. Unit driver badge program**

a. GCSS-Army tracks the hours of usage as well as the dates that licenses are issued. Dispatchers should prepare this information quarterly for the maintenance platoon leader or as directed by the approval authority to ensure Soldiers' information is accurate for promotion boards and Department of the Army photographs.

b. The requirements for the Vehicle Driver Badge include the following:

- (1) Be qualified for and possess a current OF 346 or DA Form 5984-E, issued as prescribed by AR 600-55.
- (2) Be assigned duties and responsibilities as a driver or assistant driver of Government vehicles for a minimum of 12 consecutive months or during at least 8,000 miles with no Government motor vehicle accident or traffic violation recorded on their DA Form 348 (Equipment Operator's Qualification Record (Except Aircraft)) or DA Form 348-1 (Equipment Operator's Qualification Record (Except Aircraft)).
- (3) Perform satisfactorily for a minimum period of 1 year as an active qualified driver instructor or motor vehicle driver examiner.
- (4) Verification procedures contained in paragraph 13-5.

### **13-3. Operator-S badge**

The Operator-S is an authorized component bar of the driver badge for special mechanical equipment.

a. Requirements are as follows:

- (1) Soldier or civilian whose primary duty involves the operation of Army materials handling or other mechanical equipment.
- (2) Completed 12 consecutive months or 500 hours of operation, whichever interval comes first.
- (3) Without accident or written reprimand as the result of their operation.
- (4) Operating performance must have been adequate in all respects.

b. Verification documentation (see AR 600-55).

### **13-4. Mechanic Badge**

The Mechanic Badge is an award for field-level maintainers, unit or higher, who meet the requirements as specified in AR 600-8-22.

a. *Requirements.*

- (1) Complete the standard mechanics course with a skilled rating or have demonstrated possession of sufficient previous experience as an automotive or engineer equipment mechanic to justify such a rating.
- (2) Be assigned to primary duty as an automotive or engineer mechanic, unit-level or higher, or is an active automotive or engineer mechanic instructor.

b. *Submission.*

- (1) Verification methods are addressed in paragraph 6-5 for Soldiers who received their training at an Army MOS-producing school.
- (2) Soldiers who receive their MOS through a civilian-acquired skills program or similar work experience must have their experience validated per those rules.

### **13-5. Verification procedures**

a. The maintenance platoon leader who oversees the GCSS-Army activity should coordinate with other affected platoon leaders (or their master drivers if assigned) and forward to the company commander with recommendations for the approval authority in a standard memorandum format. The supporting documentation will include—

- (1) Verification of assignments and miles operated.
  - (a) Electronic military personnel office verification of Soldier assignments meeting minimum time requirements, including written verification from other platoon leaders for Soldiers not assigned to the maintenance platoon.
  - (b) GCSS-Army verification of miles driven for driver badges (if the assigned driver meets the 8,000 miles requirement prior to 1 year of duty) or hours operated for special operator apurtenances.

- (2) Verification of 346 issue date.
- (3) Unit commander certification that personnel have had no Army motor vehicle accident or traffic violation recorded on their DA Form 348.
- b. For the Mechanic Badge, the maintenance platoon leader who oversees the GCSS–Army activity should coordinate with other affected platoon leaders (for example, supply platoon for any material handling equipment maintainers assigned to modular supply sections), and forward to the company commander with recommendations for the approval authority in a standard memorandum format. The supporting documentation should include—
  - (1) MTOE or TDA position assigned.
  - (2) The electronic military personnel office verification that the Soldier is assigned primary duty as an automotive or engineer mechanic, unit-level or higher, or is an active automotive or engineer mechanic instructor and is duty MOS-qualified.

### **13–6. Unit maintenance awards**

- a. Commanders have the discretion to award their subordinate organizations and Soldiers for maintenance excellence. AR 600–8–22 sets the parameters for military awards. As part of a unit maintenance program, unit maintenance awards encourage Soldiers to strive for better readiness and to build esprit de corps. Commanders cannot set higher standards for the mechanic and driver badges than established in this publication.
- b. The Chief of Staff, Army encourages all units to participate in the Army Award for Maintenance Excellence. The Army Award for Maintenance Excellence is an annual awards program prescribed in AR 750–1. The top winners from the Army Award for Maintenance Excellence will be nominated for the Secretary of Defense Maintenance Award. This program affords the Army’s best units to be recognized at the DoD.

## **Chapter 14**

### **Security**

#### **14–1. Motor pool security**

Security of equipment is a command responsibility. All Army personnel have the duty to ensure the proper security of equipment under their responsibility. Personnel do not have to be hand-receipted for an item to be held liable for its loss or damage (see AR 190–51 for additional requirements).

#### **14–2. Garrison considerations**

While in garrison, most vehicles, generators, weapons, and CBRN equipment are secured. Access to the unit motor pool should be limited to unit members, more specifically to members of the maintenance teams, operators and crews with logbooks performing PMCS or using the equipment, and their supervisors. Vehicles and generators are generally stored in the unit motor pool. Vehicles are normally secured with a chain wrapped through the steering wheel and padlocked. Padlock keys are normally issued with the logbook. Leaders’ presence in the motor pool and equipment storage lots is essential. Leader presence reflects the priority placed on maintenance activities by commanders.

## **Appendix A**

### **References**

#### **Section I**

##### **Required Publications**

###### **AR 190–51**

Security of Unclassified Army Resources (Sensitive and Non-Sensitive) (Cited in para 14–1.)

###### **AR 710–2**

Supply Policy Below the National Level (Cited in *para 5–15a.*)

###### **AR 750–1**

Army Materiel Maintenance Policy (Cited in para 1–3.)

###### **AR 750–6**

Army Equipment Safety and Maintenance Notification System (Cited in *para 5–12a.*)

###### **AR 750–10**

Army Modification Program (Cited in para 6–2.)

###### **ATP 4–31**

Recovery and Battle Damage Assessment and Repair (BDAR) (Cited in *para 5–30a.*)

###### **ATP 4–33**

Maintenance Operations (Cited in para 4–6.)

###### **ATP 4–90**

Brigade Support Battalion (Cited in para 3–5.)

###### **ATP 4–93**

Theater Sustainment Operations (Cited in para 10–6.)

###### **ATP 4–98**

Army Field Support Brigade (Cited in para 10–10.)

###### **DA Pam 750–1**

Army Materiel Maintenance Procedures (Cited in *para 5–11d.*)

###### **DA Pam 750–8**

The Army Maintenance Management System (TAMMS) Users Manual (Cited in para 4–14a(9).)

###### **FM 4–30**

Ordnance Operations (Cited in *para 2–3a.*)

###### **TB 43 Series**

Maintenance Expenditure Limits (Cited in *para 5–22d.*)

###### **TC 21–306**

Tracked Combat Vehicle Driver Training (Cited in para 12–5.)

#### **Section II**

##### **Prescribed Forms**

This section contains no entries.

## Appendix B

### Standard Operating Procedures

#### B-1. Areas to address in standard operating procedures

As a minimum, the following areas of the SOP should be addressed in detail—

- a. Maintenance-related duties and responsibilities for key unit personnel.
- b. The organization of the unit or FSC field maintenance platoon and section is organized.
- c. TAMMS addresses minor deviations or procedures not covered in DA Pam 750–8.

#### B-2. Minor deviations or procedures addressed in The Army Maintenance Management System

TAMMS addresses minor deviations or procedures not covered in DA Pam 750–8 as follows:

- a. GCSS–Army and automation enablers.
- b. Dispatch procedures for unit equipment.
- c. Routine transaction and reporting requirements.
- d. AESIP, DA Form 2408–9 (Equipment Control Record), requisition status, asset visibility, usage verification, and publication listings.
- e. MWO, MMIS, SOUM, product quality deficiency report submissions online, and weapons data management online.
- f. PMCS as follows—
  - (1) Procedures that must be followed by personnel during scheduled field-level PMCS periods.
  - (2) Procedures that must be followed by all unit personnel associated with field-level PMCS checks and scheduled services.
  - (3) Procedures for fault recording and correction.
  - (4) Support provided to operators for PMCS by field-level maintenance activity.
- g. AOAP.
- h. Calibration of tools and TMDE.
- i. Tool accountability and control procedures.
- j. Safety requirements, as follows:
  - (1) All applicable safety guidance associated with equipment maintenance.
  - (2) SOP and SOUM messages.
  - (3) Environmental and hazardous materials waste management.
- k. Lifting and holding device servicing, as follows:
  - (1) Arc welding and cutting.
  - (2) Chemical agent resistant coating.
  - (3) Storage and handling of compressed gases.
- l. Unit maintenance training as follows:
  - (1) The unit's program for operator and crew 10 level proficiency.
  - (2) Field-level maintainer cross-training.
  - (3) Procedures required for acquiring a Government equipment operator's license (DA Form 5984–E and OF 346).
  - (4) The unit driver and mechanic badge awards program.
  - (5) Motor pool security.
  - (6) Readiness reporting.
  - (7) Publications.
- m. Work order management as follows:
  - (1) Maintenance priorities and task management.
  - (2) Controlled exchange procedures and requirements.
  - (3) Man-hour accounting.
- n. Maintenance evacuation requirements and procedures.
- o. Equipment classifications as follows:
- p. End item and component classifications.
- q. ECOD and ACOD preparation procedures.
- r. MEL.
- s. BDAR/R.
- t. Repair parts (Class VIII or Class IX) management as follows:

- (1) SF 368 (Product Quality Deficiency Report (PQDR)) preparation and reporting.
- (2) Involvement in equipment dispatch, scheduled services, and command inspections.
- u. Development of SSL.
- v. Battery management program.
- w. Recoverable management.
- x. Scrap material management (non-hazardous material).
- y. Warranty management program.
- z. ARIMS filing system.
- aa. Equipment winterization and extreme climate program.

## Appendix C

### Ordnance Officer, Maintenance Warrant Officer, and Enlisted Personnel Military Occupational Specialties

#### C–1. Ordnance officer and maintenance warrant officer military occupational specialty

Maintenance warrant officers provide maintenance and logistics system expertise, leadership, training, mentorship, and advice. They administer, manage, maintain, operate, and integrate Army maintenance and logistical systems and equipment across the full range of Army operations. Maintenance warrant officers are confident warrior leaders, mission-oriented subject matter experts, innovative integrators of emerging system technologies, and expert technical advisors. As highly specialized maintainers, they support a multitude of Army missions throughout their career. The following is a list of the ordnance and maintenance warrant officer MOSs.

a. Materiel maintenance and munitions management officer (area of concentration (AOC) 91A). These officers are adaptive, agile, logical, and detail-oriented leaders who are directly responsible for building and maintaining the Army's combat power. Officers working in this AOC—

- (1) Enable Army readiness in support of multidomain operations.
- (2) Are responsible for the Army maintenance and ammunition process.
- (3) Ensure weapon systems are operational, ready, and available.
- (4) Are responsible for integrated maintenance support of Army conventional weapon systems, small arms, artillery, fire control equipment, missile systems and their associated GSE; electronics; track and wheel vehicles; and engineer and power generation equipment. Maintenance functions include metal-working, fabrication, welding, inspection, test, service, calibration, repair, overhaul, and reclamation.
- (5) Must develop a comprehensive knowledge of maintenance management techniques and integrated logistics support.
- (6) Must be technically competent in production control and QA techniques. Army weapons systems are technically sophisticated and critical to success in combat. They are costly to procure, produce, field, and maintain. Ensuring constant readiness while preventing the waste of resources requires officers with excellent management and leadership skills.
- (7) Must become proficient with automated logistics information systems.
- (8) Manage the Army's munitions inventory.
- (9) Lead, manage, plan, and direct ammunition supply, storage, transportation, maintenance, surveillance, inspection, stock control, safety, and security, including maintenance of associated test and handling equipment. Army munitions planners must also consider support to joint and multinational partners as dictated by operational requirements.

b. EOD officer (AOC 89E). As the Army's preeminent tactical and technical explosives specialists, EOD officers need to operate confidently with detailed and disciplined accuracy under stressful conditions, be mentally tough, work calmly under pressure, and be prudent risk takers. EOD officers are hands-on people with technical and mechanical aptitude, acute sensitivity to visual details, and the ability to orient to three dimensions. They provide dynamic leadership to formations of expertly trained EOD Soldiers. EOD officers must be effective communicators with a high aptitude for planning and organizing in support of Army units worldwide, civil authorities, and across all operational environments.

c. The 670A health services maintenance technician serves as the only single-tracked specialty trained maintenance warrant officer. This technician—

- (1) Is responsible for maintenance management requirements for and execution of operational and institutional medical activities.
- (2) Supervises the technical and tactical performance of biomedical equipment specialists, medical supply specialists, and Department of the Army Civilians and contractors.
- (3) Leads, coaches, and trains staff in the proper care, use, and maintenance of medical equipment and medical systems.
- (4) Provides guidance and technical expertise to commanders and staff on all issues concerning the life cycle of medical equipment.

d. The 913A armament systems maintenance warrant officer (warrant officer one (WO1) through chief warrant officer four (CW4)—

- (1) Is directly responsible for all activities and personnel engaged in field-level maintenance that involves the repair of small arms, field artillery, and armament weapon systems.

- (2) Directs procedures for troubleshooting and identifying malfunctions in electrical, hydraulic, fire control, and instrument items.
- (3) Establishes evacuation and replacement procedures of such items that are unserviceable and beyond the repair capabilities of forward support companies.
- (4) Manages QA and production control programs to ensure established work standards are met and repairs are made on a timely basis.
- (5) Is responsible for the accurate reporting and monitoring of maintenance operations, including tracking requisitioned repair parts through the maintenance control section in the TELS.
- (6) Enforces regulations and procedures pertaining to physical security, accountability, and shipment of weapons.
- (7) Directs repair teams in support of field units and activities.
- (8) Establishes and directs a shop safety program in accordance with applicable regulations.
- (9) Establishes a technical library and examines, interprets, and disseminates technical material, including orders and bulletins.
- e. The 914A allied trades warrant officer (WO1 through CW4)—
  - (1) Directs the setup, operation, and maintenance of machine tools and welding equipment used to fabricate or repair parts, mechanisms, tools, and machinery.
  - (2) Manages automotive body, frame, and hull repair as well as painting, glass, radiator, canvas, and woodworking shop operations.
  - (3) Supervises and conducts recovery operations and the maintenance of tracked and wheeled recovery equipment.
  - (4) Employs principles of mechanics, metals identification procedures, shop mathematics, and shop layout.
  - (5) Establishes and directs the upkeep of shop, stock, repair parts, and maintenance-related items.
  - (6) Manages QA and production control programs to ensure that established work standards are met and repairs are made on a timely basis.
  - (7) Establishes training programs to ensure that subordinates are qualified in current metal fabrication and machining techniques as well as equipment operation.
  - (8) Coordinates shop activities with other repair shops to ensure that equipment is quickly repaired and returned to user.
  - (9) Establishes and conducts a shop safety program.
- f. The 915A auto maintenance warrant officer (WO1 through chief warrant officer three (CW3))—
  - (1) Plans, organizes, and executes field maintenance of wheeled and light tracked vehicles, self-propelled artillery systems; and fire control, armament, ground support, and powered driven chemical equipment.
  - (2) Diagnoses, tests, and analyzes malfunctions of unit equipment.
  - (3) Directs the establishment and operation of unit SSLs for field repair and maintenance-related operations.
  - (4) Establishes and enforces shop fire and safety programs.
  - (5) Manages unit calibration requirements and unit-level oil analysis program.
  - (6) Prepares readiness reports.
  - (7) Writes and updates internal SOPs for maintenance areas.
  - (8) Directs emergency recovery and repair of all unit equipment.
  - (9) Manages TAMMS.
  - (10) Manages scheduling of periodic maintenance and services.
  - (11) Manages dispatch of passenger, cargo, and combat vehicles.
  - (12) Manages requisitioning and exchange of repair parts and disposal of POL.
  - (13) Establishes internal procedures to receive, issue, and store tools, parts, publications, and POL products.
- g. The 915E senior automotive maintenance warrant officer (CW4)—
  - (1) Manages, supervises, and coordinates the maintenance and repair of all ground equipment, including combat equipment, weapon systems, subsystems, and ancillary equipment.
  - (2) Analyzes trends, integrates systems, and resolves logistic requirements at all levels.
- h. The 919A engineer equipment maintenance warrant officer (WO1 through CW3)—
  - (1) Supervises personnel in maintenance of engineer and GSE.

(2) Analyzes malfunctions and supervises field-level repair and adjustment of engineer equipment that performs power generation, earthmoving, shaping and compacting, lifting and loading, quarrying and rock crushing, asphalt concrete mixing and surfacing, water purification, refrigeration and air conditioning, water gap crossing, POL transfer, and engineer electronic application.

(3) Supervises maintenance of non-engineer equipment assigned by equipment authorization documents.

(4) Inspects incoming equipment to determine repair requirements, assigns work to subordinates, and inspects outgoing equipment to ensure the quality of the work performed.

(5) Establishes maintenance and repair schedules based on equipment schedules and availability of parts, tools, personnel, and unit mission.

(6) Establishes internal administrative procedures to procure, store, and issue publications, tools, parts, and POL.

(7) Manages maintenance float items to replace equipment not repairable within prescribed time limits.

i. The 948B electronic systems maintenance warrant officer (WO1 through CW4)—

(1) Manages personnel, equipment, and facility assets for the installation, operation, repair, maintenance, and modification of radio, radar, computer, electronic data processing, controlled cryptographic items, television, fiber optical, radiological, and related communications equipment and associated tools and test and accessory equipment.

(2) Establishes section SOPs and instructions to ensure that a proper work environment is maintained.

(3) Ensures all assigned personnel adhere to maintenance schedules, TAMMS, QA–QC procedures, and GCSS–Army requirements.

j. The 948D electronic missile systems maintenance warrant officer (WO1 through CW4)—

(1) Employs digital switching theory, logic, computer fundamentals, and infrared fundamentals applicable to the Army's missile systems and associated equipment.

(2) Is responsible for the operation of maintenance support teams and field-level maintenance facilities.

(3) Monitors unit status reporting requirements for tactical missile units and associated support elements.

(4) Supervises maintenance and repair job organic tools, test sets, and associated training equipment.

(5) Estimates supply requirements, observes work practices, and detects and corrects improper procedures and techniques.

(6) Initiates and monitors reporting of discrepancy, quality discrepancy report, and engineering changes proposal documents.

(7) Ensures all assigned personnel adhere to maintenance schedules, TAMMS, QA–QC procedures, and GCSS–A requirements.

k. The 948E senior electronics maintenance warrant officer (chief warrant officer five (CW5)) manages, supervises, and coordinates the maintenance and repair of weapons systems and subsystems; and analyzes trends, integrates systems, and resolves logistic requirements at all levels. The warrant officers with this MOS are merged at the grade of CW5 from MOS 948B and MOS 948D.

## **C–2. Enlisted maintenance military occupational specialty and description of duties**

a. *68A Biomedical equipment specialist.* Services and maintains all medical equipment with mechanical, hydraulic, pneumatic, electronic, digital, optical, and radiological principles.

b. *91A Abrams tank system maintainer.* Supervises and performs maintenance on Abrams tanks. Performs maintenance on the suspension, steering, hydraulic, auxiliary power, and fire extinguisher or suppression and gas particulate systems. Diagnoses and troubleshoots malfunctions.

c. *91B Wheeled vehicle mechanic.* Supervises and performs maintenance and recovery operations on wheeled vehicles and associated items, as well as heavy-wheeled vehicles and select armored vehicles.

d. *91C Utilities equipment repairer.* Supervises and performs maintenance on utility equipment and special purpose support systems such as refrigeration systems, air conditioning units, and heaters.

e. *91D power generation equipment repairer.* Performs maintenance on tactical utility, precise power generation sets, internal combustion engines, and associated equipment.

f. *91E Machinist.* Supervises and performs the fabrication, repair, and modification of metallic and nonmetallic parts. The 91W metal workout has merged to this MOS.

g. *91F Small arms and artillery repairer.* Repairs and maintains a wide array of weapons, from small arms to field artillery and large ballistic missiles.



- h. 91H Track vehicle repairer.* Maintains tracked vehicles and supervises activities such as fuel and electrical system repair and maintenance.
- i. 91J Quartermaster and chemical equipment repairer.* Supervises or performs maintenance on chemical equipment, quartermaster machinery, forced air-heaters, and special purpose equipment.
- j. 91L Construction equipment repairer.* Maintains trucks, bulldozers, power shovels, and other heavy equipment that are needed for construction operations.
- k. 91M Bradley fighting vehicle system maintainer.* Handles the maintenance and repair of the M2/M3, A2/A3 Bradley fighting vehicle, the M6 Bradley linebacker air defense vehicle, and the M-7 Bradley fire support team vehicle.
- l. 91P Artillery mechanic.* Supervises and performs maintenance and recovery operations of all self-propelled field artillery cannon weapon systems, including automotive, turret, fire control, and chemical protection subsystems.
- m. 91S Stryker systems maintainer.* Diagnoses and troubleshoots Stryker vehicle malfunctions and repairs and replaces components using advanced test equipment, precision hand tools, and TMs and diagrams.
- n. 91X Senior maintenance supervisor.* Supervises, plans, coordinates, and directs the field and sustainment maintenance of all wheeled, tracked, armament, power generation, and utility equipment; also serves as principal maintenance or operations NCO in maintenance battalion or higher level organization.
- o. 91Z Mechanical maintenance supervisor.* Supervises or performs field and sustainment maintenance on tracked and wheeled vehicles and construction equipment.
- p. 92A Automated logistical specialist.* Maintains equipment records, parts, and inventories pertaining to receipt, storage, and distribution of materiel.
- q. 94A Land combat electronic missile system repairer.* Performs maintenance on a variety of missile systems and determines shortcomings and malfunctions in electronic, electrical, mechanical, and circuit elements.
- r. 94D Air traffic control equipment repairer.* Installs and maintains air traffic control communications, navigation aids, and landing systems; replaces equipment parts; and ensures QC.
- s. 94E Radio equipment repairer.* Supervises or performs essential PMCS on radios, transmitters, communication security equipment, and other associated equipment.
- t. 94F Computer/detection system repairer.* Maintains and repairs advanced computer systems, telecommunications devices, and other digital equipment.
- u. 94H Test measurement and diagnostic equipment maintenance support specialist.* Maintains, calibrates, and repairs precision test equipment and chronometers.
- v. 94M Radar repairer.* Maintains and repairs on-the-ground surveillance radar equipment and inspects, tests, and adjusts system components and equipment used to detect enemy artillery and mortar rounds.
- w. 94P Multiple Launch Rocket System repairer.* Performs maintenance on the hydraulics, mechanical, launcher drive, and electrical systems of various rocket systems, including the Multiple Launch Rocket System, High Mobility Artillery Rocket System, and the self-propelled launcher-loader.
- x. 94R Avionic and survivability equipment repairer.* Performs field- and sustainment-level maintenance on avionic navigation flight control systems, stabilization systems, and equipment.
- y. 94S Patriot Missile System repairer.* Performs field-level maintenance and repair on the Patriot, including the phased array radar set and control station.
- z. 94T Short range Air Defense System repairer.* Supervises and performs maintenance and repair on the Avenger Air Defense System.

### **C-3. Additional skill identifiers for maintainers**

DA Pam 611-21 lists all ASIs available for enlisted personnel. The most common ASI maintainers will have authorized on unit MTOEs—

- a. H8 Wheeled Vehicle Recovery Operations* identifies positions requiring Soldiers qualified in wheeled vehicle recovery operations. For use with MOS 91B, 91E skill level 2 (personnel only) and 3 only, 91L, and 91S (skill level 1-3 only).
- b. H9 Tracked Vehicle Recovery Operations* identifies positions requiring Soldiers qualified in tracked vehicle recovery operations. For use with MOS 91A (skill level 1-3), 91H, 91M (skill level 1-3), and 91P (skill level 1-3).

c. R1 Rough Terrain Cargo Handler (RTCH) identifies positions requiring Soldiers qualified to operate or perform maintenance on the RTCH vehicle. For use with MOS 91B, 42A, 89B, and 92A (private first class (PFC) through staff sergeant (SSG) only).

d. R5 RTCH Maintainer identifies positions requiring Soldiers qualified to perform maintenance on the RTCH vehicle. For use with MOS 91B (PFC through SSG only).

e. D8 Joint Assault Bridge and Assault Breacher Vehicle identifies positions requiring Soldiers qualified to repair and maintain the Joint Assault Bridge and the Assault Breacher Vehicle systems. For use with MOS 91A only.

## Appendix D

### Global Combat Support System—Army Transaction Codes

#### D-1. Transaction codes commonly used by the maintenance control section

- a. ZEDF—Extended Document Flow. To research purchase requests and orders.
- b. ZOAREP—Overage Reparable Report. To research recoverable and repairable items.
- c. ZMPRPT—Displays Maintenance Plan.
- d. IWBK—Material Availability Information. Parts received not installed.
- e. IW28—Change Notifications. To display all notification types both maintenance and dispatches.
- f. MM03—Display Material Information. GCSS—Army Catalog (Federal Logistics).
- g. PIC03—Display Parts Interchangeability.
- h. MMBE—Stock Overview Part Locator. To check units and SSA for parts availability.
- i. LS26—Warehouse Stocks per Material. To check the SSA stock specifically in more detail.
- j. ZSAF—MRP Command Adds. To add ZM SSL lines.
- k. ME5A—Purchase Requisitions. To validate and action orders at the unit level pending funding.
- l. ZPROSTAT—Order Status Report. To research all open or closed document numbers.
- m. ZAMW—Assignments Maintenance Workbench. To assign personnel to positions within GCSS.
- n. VL09—Cancel Goods Issue for Delivery Note. To delete outbound delivery to SSA.
- o. IQ09—Display Material Serial Number. To research serial numbers for locations and proper information.
- p. IW28—Change Notifications.
- q. ZFE—Force Element Details.
- r. MB21—Create Manual Reservation.
- s. MB25—Reservation List.
- t. Z-EQUEST—Equipment Status Report.
- u. ZSABER—Work Order Process.
- v. /ISDFPS/DISP\_EQU\_SIT—Display Equipment Level.
- w. /ISDFPS/DISP\_MAT\_SIT—Display Material Situation.
- x. ZCONB, SMX, ZCON1D, ZCON1—SSL demand analysis steps.

#### D-2. Transaction codes commonly used the motor sergeant and shop foreman

- a. For generating workload—
  - (1) ZSABER—Work Order Process.
  - (2) ISDFPS/DISP\_EQU\_SIT—Display Equipment Level.
  - (3) /ISDFPS/DISP\_MAT\_SIT—Display Material Situation.
  - (4) ZSABER—Work Order Process.
  - (5) Z-EQUEST—Equipment Status Report.
  - (6) ZMPRPT—Maintenance Plan.
  - (7) IWBK—Material availability information. Parts received not installed.
  - (8) IW28—Change Notifications. To display all notification types both maintenance and dispatches.
- b. For research—
  - (1) ZOAREP—Overage Reparable Report. To research recoverable and repairable items.
  - (2) MMBE—Stock Overview Part Locator. To check units and SSA for parts availability.
  - (3) MM03—Display Material Information. GCSS Federal Logistics.
  - (4) PIC03—Display Parts Interchangeability.
  - (5) ZEDF—Extended Document Flow. To research purchase requests and orders.
  - (6) ME5A—Purchase Requisitions. To validate and action orders at the unit level.
  - (7) ZPROSTAT—Order Status Report. To research all open or closed document numbers.
  - (8) IQ09—Display Material Serial Number. To research serial numbers for locations and proper information.
  - (9) MB25—Reservation List. List of reservations.

## **Appendix E**

### **Leaders' Maintenance Self-Test**

#### **E-1. Field-level maintainer**

Each field-level maintainer must ask themselves questions such as—

- a.* Am I technically competent enough to inspect my equipment?
- b.* Have I been in the motor pool, hangar, or equipment storage area frequently?
- c.* Have I established maintenance as a priority in my unit organization?
- d.* Have I allotted training time strictly for the care, preservation, and maintenance of equipment and maintenance training?
- e.* Have I provided sufficient manpower to accomplish the mission?
- f.* Do I foster an ownership relationship with regard to equipment?
- g.* Do I ensure equipment reports and data are correct and are forwarded by the proper means?
- h.* Are there H8/H9 qualified operators for dedicated recovery vehicles?

#### **E-2. Junior leaders**

Leadership indicators for junior leaders—

- a.* Do I exercise maintenance discipline, and what am I doing to foster it?
- b.* Am I present and an active participant during scheduled maintenance periods?
- c.* Do I respond promptly and correctly to maintenance conditions that my subordinates identify?

#### **E-3. Good maintenance management indicators**

Indicators of good maintenance management in the unit—

- a.* Am I familiar with the elements of the Army Maintenance Standard (see AR 750-1)?
- b.* If I have a resource shortfall, have I reported the results of this assessment to my chain of command?
- c.* Are all of the SOPs applicable to my unit work and have I tested them?
- d.* Do I enforce the TM XX-10 and TM XX-20 series PMCS standard for my equipment?
- e.* Are all PMCS (for example, daily, weekly, monthly, quarterly, semiannually, and annually) actually performed for all assigned equipment?
- f.* Are scheduled PMCS and equipment services placed on the unit training schedule?
- g.* Are PMCS being properly performed in accordance with applicable technical publications?
- h.* Do I have the necessary tools, test equipment, supplies, and TMs for field maintenance operations?
- i.* Are my subordinate leaders present and active participants during scheduled maintenance periods?
- j.* Are members of the field maintenance section available during PMCS to provide technical assistance to operator and crew while still having time to perform PMCS on their own equipment?
- k.* Do I review my maintenance operation transactions and reports daily?

## **Glossary of Terms**

### **Accountable property system of record**

The Government system used to control and manage accountable property records. A subset of existing organizational processes related to the life cycle management of property; the system that is integrated with the core financial system.

### **Adjust or align**

To maintain or regulate an item within prescribed limits by bringing it into proper position or by setting the operating characteristics to specified parameters.

### **Administrative deadline**

Procedure for taking equipment out of service if the commander or field-level maintenance officer determines it is necessary. Administratively deadlined equipment is FMC, per the applicable PMCS tables and AR 385–10, and is reported FMC per AR 700–138 and DA Pam 750–8 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 SOUM.
- e. Pending receipt of oil resample or special sample results.
- f. Pending completion of a required service.

### **Advanced manufacturing**

New ways to manufacture existing products and the manufacture of new products resulting from advances in technology. Depends on use and coordination of information, automation, computation, software, sensing, and networking, and making use of cutting-edge materials and emerging capabilities enabled by the physical and biological sciences. Includes additive manufacturing (also known as three-dimensional printing).

### **After operation checks**

PMCS 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 series and TM–20 series PMCS maintenance standard. Faults that render the equipment NMC and are within the authorized level of repair of the operator or crew to correct must be corrected immediately. Faults above the operator or crew authorized level of repair are immediately reported to field maintenance for correction prior to start of the next mission. Field maintenance performs unscheduled correction required by reports from operator or crew and performs required services per TM/ETM–20 series to maintain the equipment to the TM–10 series and TM–20 series PMCS maintenance standard.

### **Area maintenance support activity**

Provides, on an assigned geographical area basis, technical assistance and unit maintenance support beyond the supported units' capabilities to accomplish during scheduled training assemblies. Area maintenance support activity will be designated as area maintenance support activity (G) maintenance support for USAR ground equipment, other than aircraft.

### **Army aviation flight activity**

An ARNG TDA activity that provides field-level maintenance functions in support of ARNG aviation assets.

### **Army aviation operating facility**

An ARNG TDA activity that provides field-level maintenance functions.

### **Army aviation support facility**

An ARNG TDA maintenance activity that provides field- and Aviation Classification Repair Activity Depot-authorized sustainment-level maintenance functions to support ARNG aviation assets.

**Army Oil Analysis Program**

HQDA-directed program to enhance crew safety, improve equipment readiness, and reduce the consumption of resources through application advanced diagnostic technology to detect premature materiel degradation and support failure trend analysis.

**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 or 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, or cabinet).

**Available days**

The hours 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 aviation intermediate maintenance and authorized depot-level functions.

**Aviation support facility**

TDA activity of the U.S. Army Reserve Command 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.

**Battle damage assessment and repair**

A wartime procedure to rapidly return disabled equipment to operational condition by expeditiously repairing, substituting, fabricating, short-cutting, bypassing, cannibalizing, or jury-rigging components to restore the minimum essential systems required for the support of a specific combat mission or to enable equipment to self-recover.

**Before operation checks**

Checks performed by the operator or 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 or crew authorized level of repair, are reported to field maintenance before the mission.

**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 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.

**Cannibalization**

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.

**Capability**

A measure of operational performance to quantify contribution to the warfighter. Measure consists of an evaluation of range, lethality, and effectiveness.

**Combined support maintenance shop**

An ARNG TDA activity that provides field and sustainment levels of maintenance on Federal surface equipment issued to the ARNG.

**Commercial activities**

Army-operated and Army-managed organizations that provide products or services that may be obtained by contract with private commercial sources. Commercial activities 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 commercial activities must provide products and services regularly needed. Commercial activities will not provide products and services that will be used only once, for a short time, or for support of a special project.

**Communications security logistics support unit**

Field or sustainment maintenance activity for the maintenance of communications security equipment.

**Compliance**

The first phase of the process to qualify national maintenance providers. A national source of repair is compliant once the national maintenance manager determines it has a documented quality management system in place. Continued compliance is determined by annual surveillance audits.

**Component or 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.

**Condition based maintenance**

A set of maintenance processes and capabilities derived primarily from real-time assessment of weapon system condition obtained from embedded sensors or external test and measurements using portable equipment.

**Configuration**

The functional or physical characteristics of hardware or 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 or 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.

**Dependent units**

EAB MTOE and TDA units with no organic field maintenance capability assigned on their authorization document. Units outside of the Modular Brigade Construct described in ATP 4–33. Dependent units will be directed to some external maintenance support in the dependency statement of their MTOE narrative (SMC, DSSB, LRC, and so forth).

**Depot maintenance activity**

An industrial-type facility established to perform depot maintenance on weapon systems, equipment, and components. 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**

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**

The capability maintained within defense depots to meet readiness and sustainability requirements of the weapon systems that support the Joint Chiefs of Staff scenarios. 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 public private partnership**

Exists between an organic depot maintenance activity and one or more private industry or other entities to perform work or use facilities and equipment. Program offices, inventory control points, and materiel, systems, and logistics commands may also be parties to such agreements or be designated to act on behalf of organic depot maintenance activities.

**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.

**Depot-level reparable**

A Class VIII or Class IX item with a maintenance repair code of D or L.

**Discard and replace**

Procedure to follow if selected items are designated as nonrepairable and become inoperable.

**During operations checks**

Checks performed by the operator or 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 or crew authorized level of repair to correct) or reported during or after the mission.

**Electromagnetic environmental effect**

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**

A three-position alphanumeric code assigned to each end item managed or used by the Army that meets all the following criteria: end items with an NSN recorded in the Army master data file; type classified standard, low-rate production, or limited procurement-urgent per AR 770–2 and AR 770–3; and assigned appropriation or budget activity account code A through Q inclusive.

**Equipment category code**

A two-position alphabetical code used in automatic data processing systems to produce the complete description of an item of equipment by make, model, noun nomenclature, line number, and NSN if desired or required. It is also entered in specified blocks or positions on manually produced data source documents. The first letter identifies the primary category of equipment.

**Equipment concentration site**

Area for equipment storage and support to USAR and other authorized units during inactive duty training, annual training, and mobilization; includes a maintenance and storage 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 (see EM 0007) but may require other end items to perform a mission (for example, tank, truck, radio, generators, and machine guns).

**Equipment improvement recommendation**

Written reports on SF 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 code**

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 MTOEs.

**Equipment services**

Specified maintenance actions performed on equipment, components, and systems when required, including providing routine checks, adjustments, changes, analysis, and lubrication, in accordance with designer and engineer specifications.

**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**

Indicates that a piece of equipment has a deficiency or shortcoming.

**Fault isolation**

Test performed to isolate faults within a piece of equipment.

**Fault repair**

The process used by operators and maintenance personnel to restore an equipment item to full functionality as originally designed or engineered.

**Field maintenance**

The first operation of the Army Maintenance System. Characterized by the performance of maintenance tasks "on system" in a tactical environment using trained personnel, tools, and TMDE. Field maintenance is typically operator or crew maintenance and repair and return to user maintenance operations.

**Field maintenance shop**

An ARNG activity that provides field maintenance for Federal surface equipment issued to supported units.

**Field maintenance shop sub-activity**

An ARNG field-level maintenance sub-facility established to supplement limited available workspace authorized a parent field maintenance shop or geographic separation of supported units.

**Field-level maintainers**

Personnel assigned to units by MTOE to diagnose, repair, install, and maintain Army equipment at the field level (see app C for various MOS of field-level maintainers).

**Fleet management**

The administrative approach to organize, coordinate, and oversee routine and ad hoc system maintenance to improve efficiency and reduce cost. The fleet manager is the individual on written orders responsible for maintaining knowledge and utilization of all fleet information and user feedback to forecast new maintenance requirements, arrange staff to provide support, maintain and monitor data management systems to organize fleet maintenance activities based on mission demands, monitor fuel requirements, develop and implement operational standards to maintain best practices, and plan and prepare an annual budget that accounts for all expenditures against financial objectives.

**Fleet planning**

Provides a common operational picture for all impacted stakeholders of a weapon system's age, capability (protection, payload, and performance), and affordability. Fleet plans may involve proactive plans for independent or concurrent efforts to buy new assets (procure); modernize an existing fleet (upgrade); increase maintainability, reliability, supportability, survivability (improve); repair assets to TM-10 and TM-20 series (reset); repair assets to zero miles or zero hours (recapitalization); or remove assets from the Army inventory (divest).

**Forward support maintenance**

Maintenance oriented toward quick turnaround to the user to maximize combat time by minimizing repair and evacuation time.

**Full recapitalization**

Rebuilding and upgrading systems to the extent required to meet the recapitalization standard.

**Fully mission capable**

A materiel condition indicating that systems and equipment are safe and have all mission essential sub-systems installed and operating as designated by applicable AR. An FMC vehicle or system has no faults that are listed in the "not fully mission capable ready if" columns of the TM -10/20 series PMCS tables and AR 385-10 provisions that apply to the vehicle or system or its sub-system required by AR 700-138. The terms ready and available and FMC refer to the same status: equipment is on hand and able to perform its combat missions.

**General purpose test, measurement, and diagnostic equipment**

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 continental United States base, field activities, administrative headquarters and forces provided for peacetime-peculiar activities. Units and activities included in general support forces do not report status or 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: go (functioning properly) and no-go (not functioning properly). Such conditions are displayed using meters or visual or audible alarms, sensors, or similar mechanisms.

**Hardness assurance**

Processes, procedures, and methodologies applied in the preproduction and production phases of the acquisition cycle to achieve nuclear hardness.

**Hardness maintenance**

Comprehensive procedures that are applied during the post-production phase of the acquisition cycle to ensure that the designated hardness does not degrade.

**Hardness surveillance**

Periodic tests, analysis, and inspections performed at the system level throughout a system's life cycle to monitor hardness integrity.

**Home station training equipment**

A pool of theater-unique equipment specifically authorized by HQDA to be prepositioned at selected installations to support training requirements for equipment that would otherwise not be available to deploying units. Home station training provides deploying units with standard and nonstandard equipment for individual and collective training that duplicates the equipment they will use in the theater.

**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.

**Inspection**

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

**Installed building equipment**

Includes items of real property affixed to or built into a facility that are an integral part of the facility.

**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.

**Item unique identification**

A system of marking items delivered to the DoD with unique item identifiers that have machine-readable data elements to distinguish an item from all other like and unlike items. Unique item identifiers assigned to items are registered in the DoD Item Unique Identification Registry.

**Line item number**

A six-position alphanumeric number that identifies the generic nomenclature of specific types of equipment. Standard line item numbers consist of one alpha character followed by five numeric characters. Standard line item numbers are assigned by the AMC and are listed in EM 0007.

**Line replaceable unit**

A combination of components or modules installed in an item of equipment or system that is replaceable in the operational environment (that is, under field or combat conditions). A line replaceable unit may be a printed circuit board, black box, component, major component, alternator, carburetor, avionics, tank engine, and road wheel assembly installed weapons. This repair by replacement is normally accomplished as far forward as possible by unit (organizational) maintenance personnel.

**Logistic readiness center Army field support battalion**

Provides global logistical support to individual Soldiers and units assigned to or mobilize units. The LRC AFSBn manages installation supply, maintenance, and transportation to include food service, ammunition supply, clothing issue facilities and clothing initial issue points, hazardous material, bulk fuel, personal property and household goods, passenger travel, nontactical vehicles, rail, and garrison equipment.

**Logistics information system**

Legacy automated systems used to communicate with other units on vertical and horizontal flow of logistics and maintenance information and status.

**Maintainability**

Characteristics of design that inherently provide for the retention of or restoration of a specified condition within a given period 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 activity**

Facility that performs field- or sustainment-level maintenance to assigned customers (for example, FSCs, maintenance companies, LRCs, theater maintenance support and Theater Logistics Support Center–Europe activities, Materiel Support Center Korea, depots, and contractor-operated maintenance facilities).

**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 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 or 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. End items, assemblages, components, or systems that require maintenance while in storage. Generally, these are line item numbers contained within the Army maintenance master data file.

**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**

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.

**Major assembly**

Separately identified by type, model, and series and assigned item ID number (see EM 0007). For example, receivers or receiver transmitters in radio sets and machine guns or other weapons in secondary armaments subsystems of combat vehicles.

**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.

**Medical device (including dental and veterinary items)**

Devices used in the medical diagnosis, therapy, and treatment of injury or disease. This equipment consists primarily of Federal Supply Catalog 6500 items that are procured by the U.S. Army Medical Materiel Development Activity to implement health service support for the Army. It also consists of similar commercial, nonstandard items, approved by the Food and Drug Administration and marketed as medical devices, used to provide state-of-the-art patient care. The equipment is maintained and repaired by trained biomedical equipment specialists.

**Mobile contact team**

USAR field maintenance personnel and area maintenance support activity or equipment concentration site maintenance technicians 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**

An ARNG TDA maintenance facility that, when collocated with a combined support maintenance shop, provides full time field support to ARNG equipment assigned to the site. When not collocated, maneuver area training equipment sites provide field and sustainment support to equipment and units assigned.

**Modernization**

The development or procurement of new systems with improved warfighting capabilities. The Army's re-capitalization effort does not encompass modernization.

**Module**

An assembly containing a complete self-contained circuit or sub-circuit. It may consist of a single printed circuit board, in which case it is synonymous with a printed circuit board or may comprise two or more printed circuit boards mechanically attached to one another and removable from the next high assembly as a single unit.

**National maintenance program repair standard**

The standard recognized as the single Army sustainment standard for a reparable NSN. It is defined as the highest published standard and as such may be a depot maintenance work requirement, a national maintenance work requirement, an AMCOM engineering directive, a TM, a commercial manual, or a statement of work. It is the single standard recognized by the item manager as the sustainment repair standard.

**Non-available days**

The number of hours the equipment was not able to do its mission; the time the equipment is NMC. This term is used on DA Form 2406 (Materiel Condition Status Report) to rate equipment's ability to do its combat or combat support job.

**Not mission capable**

A materiel condition indicating that equipment cannot perform any one of its combat missions. NMC time is divided into NMC maintenance or NMC supply.

**Not mission capable maintenance**

Equipment that cannot perform its combat mission because maintenance work is 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 diagnostic test findings relative to the serviceability of the oil and its lubricating capability.

**Onsite maintenance**

Maintenance authorized to be performed where the equipment is operated.

**Operator or crew maintenance**

The cornerstone of Army maintenance, the first and most critical operation of the Army Maintenance System. It starts with the operator or crew performing PMCS using the applicable TM-10 series. The before and during PMCS concentrate on ensuring equipment is FMC. Maintenance operations normally assigned to operator or crew include the following:

- a. Performance of PMCS.
- b. Inspections by sight and touch of accessible components per the TM-10 series and condition based maintenance indicators or instrumentation.

- c. Lubrication, cleaning (including corrective actions to repair corrosive damage), preserving (including spot painting), tightening, replacement, and minor adjustments authorized by the MAC.
- d. Limited diagnosis and fault isolation as authorized by the MAC. This requires appropriate resources onboard the equipment or system to perform these tasks.
- e. Replacement of combat spares (unserviceable parts, modules, and assemblies) as authorized by the MAC and carried on board the equipment or system.

### **Overhaul**

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, national maintenance work requirements, or similar technical directions that identify components exhibiting wear and directs the replacement or adjustment of those items in accordance with the applicable technical specifications.

### **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).

### **Partially mission capable**

Material condition of an aircraft or training device indicating that it can perform at least one but not all of its missions because of maintenance requirements existing on the inoperable subsystems. Partial mission capable is divided into partial mission capable maintenance and partial mission capable supply.

### **Possible days or hours**

The number of calendar days or hours an item was on hand on the accountable property system of record during the DA Form 2406 report. For an item received during the reporting period, the first day or hour it was on hand is counted as a possible day. The last day an item was on hand (that is, the day it was lost from the accountable property system of record) is not counted as a possible day.

### **Pre-combat checks**

Essential functional and safety checks performed by the operator and crew per the system's precombat checklist to ensure the system can perform its warfighting 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 and crew authorization to correct, reported during or after the mission.

### **Pre-deployment training equipment**

A pool of non-standard equipment pre-positioned at select installations to support pre-deployment training that replicates the equipment units require to accomplish its deployed mission. Pre-deployment training equipment is low-density, high-demand, theater-specific equipment not available on the installation or determined unavailable for hand receipt or lateral transfer from another unit or installation to support training requirements for 90 days or less.

### **Predictive maintenance**

Maintenance actions based on the observation of data analysis; trends, models, or algorithms to assign replacement of (Class VIII or Class IX) components or sub-assemblies in advance of functional failure.

### **Preventive maintenance**

All actions performed to retain an item in a specified condition by providing systematic inspection, detection, and prevention of incipient failures.

### **Preventive maintenance checks and service**

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 TM, LO, and ETM 10– and 20–series.

**Product support analysis**

A composite of all the support considerations necessary to ensure the effective and economical support of a system for its life cycle. Product support analysis is an integral part of all aspects of system acquisition and fielding. The principal elements of product support analysis related to the overall system life cycle are contained in AR 700–127 and Society of Automobile Engineers TA–STD–0017A.

**Prognostic and predictive maintenance**

The data and machine learning-driven capability to measure equipment health and performance characteristics to support the commander and life cycle manager's ability to plan and execute data-informed and fleet management readiness decisions. It is achieved through the application and integration of processes, technologies, and knowledge-based capabilities that will allow the Army to achieve and maintain targeted availability, reliability, and cost targets for weapon systems across their life cycle.

**Prognostic maintenance**

Maintenance actions related to using condition data to influence mitigation of functional failures of (Class VII) repairable systems or subsystems through replacement or repair of subordinate assemblies or related components.

**Readiness**

The capability of a unit or formation, ship, weapon system, or equipment to perform the mission or functions for which it is organized or designed.

**Rear detachment equipment**

Non-deploying equipment that is accounted for on the unit's accountable property system of record by rear detachment personnel.

**Rebuild**

Maintenance that restores the system to a like-new condition in appearance, performance, and life expectancy. It inserts new technology where practical to improve reliability and maintainability. The rebuild process is a total end item 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. For rebuild, like-new condition includes technology insertion and results in same model new measurable (expected) life.

**Recapitalization**

The rebuild and selected upgrade of currently fielded systems to ensure operational readiness and a near zero-time or zero-mile system.

**Regional maintenance center**

A communications-electronics field or sustainment maintenance activity with fixed shops and contact teams that are managed by the Army Sustainment Command.

**Repair**

Restoration or replacement of parts or units to maintain efficient operating conditions.

**Repairable item**

An item that can be restored to perform all its required functions by corrective maintenance.

**Reparable**

Class VIII or Class IX secondary items that carry a maintenance repair code of D, F, H, or L.

**Replace**

Removal of consumable or repairable unserviceable item or component and installation of a serviceable item or component in its place. Replace is authorized by the MAC and assigned a maintenance level that is shown as the third position of the source, maintenance, and recoverability code (Class II, III, V, VIII, and IX).

**Reset**

A set of actions to restore equipment to a desired level of combat capability commensurate with a unit's future mission. Reset reverses the effects of combat stress on equipment.

**Scheduled preventive maintenance checks and services**

Checks and services performed by unit maintenance personnel with assistance from the operation or crew per the TM or ETM 10 series PMCS tables and lube orders. Some equipment also requires scheduled PMCS tasks to be performed by field personnel per the equipment TM/ETM 20 series. All equipment faults are corrected or, if above the unit maintenance level authorization (per MAC) to correct, job ordered to field 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.

**Selected upgrade**

Rebuilds the system and adds warfighting capability improvements that address capability shortcomings. The result of a recapitalization selected upgrade is a system with a new model and a new life and improved warfighting capability.

**Shortcoming**

A fault that requires maintenance or supply action on a piece of equipment but does not render equipment NMC.

**Sub-shops**

Sub-elements of area maintenance support activities, combined support maintenance shops, equipment concentration sites, or organizational field maintenance sub-shops 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 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 or system.

**Support equipment**

All ancillary and associated equipment (mobile or fixed) required to separate and support a materiel system. This includes associated support items of equipment 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 operations**

The staff function of planning, coordinating, and synchronizing sustainment in support of units conducting decisive action in an area of operations (see ATP 4–93). This includes supply, distribution, maintenance, and medical support. Although the support operations section is separate from the battalion S–3, the support operations section is fundamentally part of BSB operations.

**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 product support analysis constitute the support system: support and test equipment, supply support, transportation and handling, technical data, facilities, and trained personnel. The other elements of product support analysis are how the support system is developed and implemented.

**Sustainment maintenance**

The second operation of the Army Maintenance System. Characterized by the performance of maintenance tasks “off system” in a secure environment using trained personnel, tools, and TMDE. Sustainment maintenance is typically repair and return to stock and depot maintenance operations.

**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.



**Tactical Enterprise Logistics Systems**

A set of synchronized logistics applications and hardware used to track maintenance, property, cost of ownership, and other financial transactions related to logistics for all Army units within GCSS–Army.

**Temporary dependents**

Units that have been left without their organic maintenance support or the identified field-level maintenance as directed MTOE dependency narrative maintenance support due to deployment or basing decisions.

**Test, measurement, and diagnostic equipment**

Any system or device used to evaluate the operational condition of an end item or subsystem thereof to identify or isolate any actual or potential malfunction. This TMDE includes diagnostic and prognostic equipment; semiautomatic and automatic test equipment, to include test program sets with issued software; and calibration test or measurement equipment. When the term TMDE is used, it refers to both general purpose TMDE and special purpose TMDE.

**Theater-provided equipment**

Permanent theater equipment that has been identified, collected, and positioned forward to offset equipment deployment requirements, fill shortages, fill Department of the Army-approved operational need statements, or fill minimum essential equipment lists.

**Unique item identifier**

A globally unique and unambiguous identifier that distinguishes an item from all other like and unlike items. The unique item identifier is a concatenated value that is derived from a unique item identifier dataset of one or more data elements. For DoD purposes, a compliant unique item identifier is a Construct 1, Construct 2, global individual asset identifier, serialized global returnable asset identifier, vehicle identification number, or electronic serial number (for cell phones only), all of which have their data elements encoded in a DoD-compliant two-dimensional data matrix.

**Unit identification code**

A six-character code assigned to a specific unit. All units' organizations and activities use their own UIC. Contractors, manufacturers, and commercial activities do not have UICs.

**Unit maintenance shop**

Maintenance facility located in conjunction with a USAR center or Armed Forces Reserve Center for unit training and equipment support.

**Unit training equipment sites**

An ARNG TDA maintenance facility that provides full time field maintenance support to ARNG equipment assigned to the site.

**Winterization or winterized**

The application or installation of auxiliary kits or equipment that may include engine pre-heaters, personnel heater kits, and hardtop or insulated closures necessary to pre-heat and start equipment within 1 hour and maintain a temperature of 41 degrees Fahrenheit in troop compartments when in a temperature range of negative 25 degrees Fahrenheit to negative 60 degrees Fahrenheit. Also includes the use of arctic grade lubricants and fluids for engines, transmissions, gear cases, and other assemblies, as necessary.

# ***SUMMARY of CHANGE***

DA PAM 750–3  
Guide to Field Maintenance Operations

This major revision, dated 11 April 2023 —

- Changes title from Soldiers' Guide for Field Maintenance Operations to Guide to Field Maintenance Operations (title page).
- Adds the Army maintenance concept (para 2–1).
- Describes external and internal maintenance support (paras 2–8 and 2–9).
- Adds maintenance officer and enlisted military occupational specialties (paras 2–10 and 2–11).
- Identifies different types of organizations that perform maintenance (chap 3).
- Adds field-level medical maintenance (para 3–10).
- Adds Composite Watercraft Company maintenance (para 3–11).
- Updates key maintenance personnel roles and responsibilities (chap 4).
- Defines the maintenance control section types (para 4–5).
- Explains Army maintenance fundamentals (chap 5).
- Describes process and program-driven maintenance (paras 5–2 and 6–1).
- Replaces “Army Force Generation Model” with “Regionally Aligned Readiness and Modernization Model” (*para 5–10b*).
- Adds unit-maintained equipment and removes references to left-behind equipment (para 5–11).
- Adds types of dispatch (para 5–27).
- Updates and consolidates key maintenance programs (chap 6).
- Describes priorities of maintenance (para 8–2).
- Explains maintenance management tools (para 8–4).
- Describes systems-based tools for research and data (paras 8–7 through 8–9).
- Describes command-directed reporting requirements (para 9–2).
- Describes support operations (para 10–2).
- Adds support operations senior maintenance warrant officer duties (para 10–3).

- Adds support operations noncommissioned officer duties (para 10–4).
- Describes logistics assistance representatives (para 10–12).
- Updates maintenance training information (chap 12).
- Adds unit standard operating procedure requirements (app B).
- Describes ordnance officer, maintenance warrant officer, and enlisted personnel military occupational specialties (app C).
- Adds Global Combat Support System–Army maintenance-related transaction codes (app D).
- Adds the leaders' maintenance self-test (app E).
- Eliminates references to Automated Reset Management Tool (throughout).
- Updates logistics information systems (throughout).

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