

Chapter 1 Introduction

1-1. Purpose

a. This pamphlet provides a central location for information most often needed for motor pool daily garrison operations. It is not intended to replace other publications, but will tie maintenance policy as it applies to unit maintenance operations together in a usable form. It is understood that there are different types of units and equipment found throughout the Active Army and Reserve Components, but the procedures for unit maintenance operations in the garrison environment are similar. Unit level maintenance tasks are defined in AR 750-1 as tasks performed by the operator, crew, and/or unit maintenance personnel. Unit maintenance is the foundation of the Army's maintenance system.

b. This pamphlet applies to all Army equipment except—

- (1) Installed equipment (see AR 420-17).
- (2) Industrial production equipment.
- (3) Nonstandard equipment that is locally purchased and has not been type classified or assigned an NSN. However, nontactical (commercial) wheeled vehicles are covered by this pamphlet.
- (4) Equipment bought with nonappropriated funds.
- (5) Medical equipment covered by TB 38-750-2.

c. This pamphlet is arranged in chapters designed to show how those sub-functional areas of unit level maintenance operations not covered in detail within AR 750-1, chapter 2, section III should function. The guidance found in this pamphlet can be applied to any unit maintenance operation, regardless of the density of equipment.

1-2. References

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

1-3. Explanation of abbreviations and terms

Abbreviations and special terms used in this pamphlet are explained in the consolidated glossary.

Chapter 2 Essential Functional Areas Within Unit Maintenance

2-1. The Army Maintenance Management System (TAMMS)

a. *Operation of the TAMMS.* The Army Maintenance Management System (DA Pam 738-750) describes the forms and records required in the performance of unit level maintenance. A unit's TAMMS functions are performed by one or more school trained Equipment Records and Parts Specialists, Military Occupational Specialty (MOS) 76C. The 76C must be under the direct supervision of the NCOIC of the maintenance administration section or the unit motor sergeant. The TAMMS is either operated manually or using the automated Unit Level Logistics System (ULLS). The ULLS is an automated system that improves the timeliness, accuracy and reporting of maintenance data. This is the most important automated system to the unit maintenance managers. Regardless of the system being used, the purpose of a unit's TAMMS operation is to create, maintain, and properly dispose of operational, maintenance and equipment historical records.

b. *Operational records.* Those forms and records that provide the commander and maintenance manager a means to control the use of unit equipment. Operational forms and records are maintained in a motor pool per DA Pam 738-750, chapter 2. The procedures used by a unit to dispatch equipment should be tightly controlled and clearly explained in the maintenance portion of the unit standing operating procedures (SOP). The detailed steps within the dispatch loop (fig 2-1) can vary from unit to unit, but the essential TAMMS clerk tasks are to—

(1) Check the operators OF 346 (U.S. Government Operators Identification Card) to ensure validity for equipment requested.

(2) Check DD Form 314 (Preventive Maintenance Schedule and Record) to ensure requested equipment is fully mission capable, and no maintenance actions are overdue, and DD Form 314 (Preventive Maintenance Schedule and Record) for scheduled services due.

(3) Check and verify that all operator entries are properly logged on DD Form 1970 (Motor Equipment Utilization Record).

(4) Make all required entries on DA Form 2401 (Organization Control Record for Equipment).

(5) Check to see if the operator listed any new faults or deficiencies DA Form 2404 (Daily Equipment Inspection and Maintenance Worksheet) that require any action.

(6) Submit any DA Form 2404 that was submitted by an operator to the appropriate maintenance supervisor upon return to the motor pool; report any faults not previously entered on the DA Form 2408-14 (Equipment Uncorrected Fault Record) or ULLS equivalent.

(7) Ensure that any DA Form 2404 submitted containing a deficiency is immediately forwarded to the appropriate maintenance supervisor for action. When a non-mission capable (NMC) fault requires repairs above the unit's capabilities, a DA Form 2407 (Maintenance Request) is used to request assistance from DSU. Refer to figure 2-2 for an example of organizational level repair workflow to DS/GS maintenance.

c. *Maintenance records.* Maintenance records, with the exception of DA Form 2404, differ from operational records in that 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, maintenance forms and records are used by unit maintenance personnel to record and initiate required maintenance actions and reasons for delay. The entire unit maintenance section provides input to, and uses maintenance records. It is therefore, essential that unit maintenance managers/supervisors evaluate and monitor the flow of information contained on maintenance forms and records regularly. Some maintenance records are produced automatically in units equipped with ULLS, but the purposes of the various forms are the same. The most critical tasks the TAMMS clerk must accomplish are to—

(1) Maintain the DD Form 314 Per DA Pam 738-750, chapter 2. The manual version of this form is the most difficult form in the motor pool to keep current. Maintenance managers must be experts on the numerous entries that the TAMMS clerk must make on this form. The constant updating of scheduled -20 level preventive maintenance checks and services (PMCS), lubrication, Army Oil Analysis Program (AOAP), and NMC information is extremely important. If the TAMMS clerk allows the DD Form 314 to become outdated, it becomes difficult for the maintenance supervisor to plan upcoming services, and adversely impacts on the accuracy of equipment readiness rates reported on the DA Form 2406 (Materiel Condition Status Report).

(2) Update and reconcile the DA Form 2408-14. The DA Form 2408-14 is a dynamic form listing all uncorrected faults (not deficiencies) and the reason they have not been corrected. The TAMMS clerk must constantly update the DA Form 2408-14 as new faults are reported by operators and old faults are corrected by maintenance personnel. Equipment operators and unit mechanics use the DA Form 2408-14 as a reference when performing -10 and -20 level PMCS to avoid reporting faults that have already been identified and actions that have been deferred. This form is a valuable tool that can be used to identify systemic problems in a unit's maintenance operation. For example, comparing this form against its equipment can reveal operators who are unable to properly perform PMCS, problems in the prompt requesting of repair parts and inadequate -20 level PMCS. Whether a unit uses the actual DA Form 2408-14 or a facsimile produced by ULLS, this form requires frequent attention from unit level commanders and maintenance managers.

(3) The TAMMS/PLL clerk is the critical link in the flow and disposition of the DA Form 2404. The DA Form 2404 is the source document for entries on the DA Form 2408-14 and DA Form 2406. Per DA Pam 738-750, chapter 3, the DA Form 2404 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 SOP

d. 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 lifecycle of a piece of equipment in accordance with DA Pam 738-750, chapter 5. Most of these forms accompany specific components and major end-items throughout the life of the equipment. Other historical records are mailed to a collection agency rather than being disposed of at the unit level, such as the DA Form 2408-4. Some of these forms are not kept in hard-copy in units equipped with ULLS. The frequently used historical forms that the TAMMS clerk must maintain are as follows:

(1) The DA Form 2408-4. This form is used to record the firing and certain maintenance tasks on weapons with cannon or mortar tubes. Commanders and unit level maintenance managers should often check the condition of these forms and procedures used to enter information on them. Maintenance personnel use information from the DA Form 2408-4 to determine the serviceability of cannons and mortars. Incorrect information can cause continued use of unsafe weapons. Active Army units closeout and mail their DA Forms 2408-4 to the address shown in DA Pam 738-750, chapter 5. 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 a DA Form 2408-4 is used for Air Defense Weapons Systems, the form is disposed of per DA Pam 738-750, chapter 5.

(2) The DA Form 2408-20. This form is maintained by the TAMMS clerk to record every oil sampling action and result of an oil analysis returned by the Army Oil Analysis Program (AOAP) laboratory. A DA Form 2408-20 is maintained on each component enrolled in the AOAP as directed by DA Pam 738-750, chapter 5. It is essential that information is kept current on the DA Form 2408-20, since it must accompany the component when turned in for repair or rebuild. Additionally, unit 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.

(3) The DA Form 2408-5 (Equipment Modification Record). This form is used to show published and applied modification work orders (MWOs) on all equipment listed in appendix E of DA Pam 738-750. DA Form 2408-5 will be initiated only upon notification of the first published Department of the Army MWO (DAMWO). The organization that applies the MWO will usually make the entries in this section. It is essential that all MWOs are kept current on the DA Form 2408-5 since it must accompany the equipment when it is turned in for repair or rebuild. The DA Form 2408-5 will be a permanent log book record.

2-2. Prescribed load list (PLL)

a. Units authorized personnel, tools, and equipment to perform unit level maintenance will normally have a PLL. A PLL consists of unit maintenance repair parts that are demand supported, non-demand supported, and specified initial stockage repair parts for newly introduced end items (AR 710-2, chap 2). Most, but not all of the repair parts stocked on a PLL are demand supported.

b. The unit's PLL functions are performed by one or more school trained 76C, under the direct supervision of the NCOIC of the maintenance administration section or unit motor sergeant.

c. Automated PLL systems have their own users publication for use by PLL clerks and maintenance managers. The ULLS End Users Manual and local SOP dictates how class IX repair parts are ordered. When under an automated supply system daily diskettes are forwarded to your supporting unit. Refer to figure 2-3 for ULLS diskette daily workflow. Units operating under the manual system will find detailed guidance in DA Pam 710-2-1, chapter 8. Regardless of the system used, the essential PLL clerk's tasks are to—

(1) Know which Class IX repair parts are authorized in the unit and in what quantities.

(2) Ensure that stock locations and quantities on-hand match the PLL records.

(3) Reorder replenishment repair parts as they are issued, unless no longer authorized.

(4) Ensure all repair parts are secured in a controlled area using appropriate security measures. Also ensure that repair parts are protected from damage.

(5) Ensure that partial parts received are controlled and stored in a secure area to prevent pilferage.

(6) Ensure that excess parts are turned in promptly in accordance with appropriate turn in procedures.

(7) Maintain a neat and accurate document register. Also ensure that the commander or designated representative initials the document register for high priority requests.

(8) Understand the TAMMS records and PLL functions interface (fig 2-2).

(9) Reconcile the document register with the current status received from the supporting supply activity (SSA).

(10) Reconcile commanders financial transaction listing with the document register.

(11) Understand how to properly use the Army Master Data File (AMDF) and ensure that a copy of the AMDF is available.

(12) Receive/pick up parts.

2-3. Publications

a. A unit's management of its publications account can enhance or degrade both operator and unit level maintenance operations. Operators must have current technical manuals (TMs) for proper equipment operation and performance of PMCS.

b. Unit level mechanics and supervisors must have current unit level maintenance TMs, lubrication orders (LOs), training circulars (TCs), and technical bulletins (TBs) to properly maintain and service assigned equipment.

c. Maintenance managers need Army regulations (ARs), DA pamphlets (DA PAMs), field manuals (FMs), and supply catalogs (SCs) to ensure their unit is operating per Army doctrine and Federal law.

d. A publications account is established for every unit that has an active DA Form 12-R (Request for Establishment of a Publication Account) on file at the Baltimore Publications Center. The DA Form 12-series form is used to order publications against the unit account. It also keeps the Baltimore Publications Center updated on the quantity and types of publications that they are required to keep current in the unit. One-time requests and resupply of publications are accomplished using DA Form 4569 (USAPC Requisition Code Sheet).

e. As a minimum, a unit maintenance operation should have the following: one operator's manual and LO for each piece of equipment, one set of TMs and LOs for each company maintenance team (CMT), and one complete set of TMs, LOs, FMs, TBs, SCs and ARs for the unit maintenance platoon/section headquarters. There should be enough manuals so that maintenance personnel do not need to leave their worksite to use a manual. DA Pam 25-30, (Consolidated Index of Army Publications and Blank Forms) provides the maintenance manager with all needed publications information.

f. Maintenance managers sometimes find their unit's TM library in such poor condition that a complete review is necessary. The easiest and fastest way to correct this problem is by obtaining an index of equipment publications from the United States Army Material Command (USAMC), Material Readiness Support Activity (MRSA) that is tailor-made for the unit. Prepare and mail a listing of all unit equipment line item numbers (LIN) and national stock numbers (NSNs) to USAMC Material Readiness Support Activity, ATTN: AMXMD-MP, Lexington KY 40511-5101. MRSA will provide a listing of all applicable TMs with change information organized for easy use.

2-4. Tools and test, measurement, and diagnostic equipment (TMDE)

a. The sophisticated types of vehicles and weapons systems found in motor pools today cannot be maintained properly without the authorized tools and TMDE. Commanders, unit maintenance managers, and supervisors must ensure that all sets, kits, and outfits (SKO) and special tools are being used and maintained properly; properly accounted for; and promptly replaced when unserviceable or lost. Unit mechanics 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. Tool room procedures are explained in detail in DA Pam 710-2-1, chapter 6, paragraph 6-3. A copy of DA Form 5519-R (Tool Sign Out Log/Register) can be found at the back of DA Pam 710-2-1. The procedures used to account for lost, damaged, or destroyed tools issued from tool rooms can be found in AR 735-5, chapter

b. TMDE is of little value if it's not used and calibrated. TMDE is any system or device capable of being used to evaluate the operational condition of equipment. It identifies or isolates actual or potential malfunctions. The accuracy of TMDE will have an effect on the quality of work.

(1) AR 750-25 covers the Army's TMDE Calibration and Repair Support Program.

(2) Know your calibration requirements and spot check equipment at random for compliance.

(3) TB 750-25 has the word on required records and forms for calibration.

(4) Some common maintenance items requiring calibration are: torque wrenches, multimeters, and simplified test equipment (STE).

(5) If you have an item you think needs calibration but it is not on the list, verify it in TB 43-180. Make sure your TMDE is being used and is not gathering dust. The three types of tools commonly found at unit level are as follows:

(a) Mechanic's tool kits that consist of common handtools authorized by the unit TOE. These tool kits are based upon the number of mechanics authorized.

(b) Shop equipment, common and supplements, which contain tools and TMDE tailored to either company or battalion level sections and are issued from a tool room/vehicle.

(c) Equipment special tools required to perform unit level maintenance on specific equipment and listed in the applicable unit level repair parts TM.

c. Maintenance managers must screen equipment -20 level parts manuals to obtain the NSNs for their tools. They must also ensure that hand receipts are prepared to maintain accountability for these tools.

2-5. Preventive maintenance checks and services (PMCS)

a. AR 750-1 states that "unit level maintenance is the foundation of the Army's maintenance system." PMCS is the foundation of unit level maintenance. PMCS as a system includes all checks and services performed by the operator/crew and the unit maintenance section. It is performed in order to identify and correct faults, and perform required services on all assigned equipment. AR 750-1, chapter 3, further states that commanders are required to maintain equipment at TM -10/20 PMCS standards according to the appropriate technical manuals.

b. No amount of operator/crew level maintenance (-10 PMCS)

can make up for improperly performed unit level scheduled services (-20 PMCS). Conversely, the most efficient unit level PMCS program will not counter the adverse impact of improperly performed operator/crew level PMCS. Unit commanders and maintenance managers must develop their PMCS program as a unified effort of both operator/crew and unit mechanics. This complete package can help avoid the adversarial relationship that can develop between operators and maintainers at the unit level. As a minimum, a well organized PMCS program should include—

(1) The commanders commitment to the enforcement of published guidance on the proper performance of PMCS by operator/crew and unit maintenance personnel.

(2) A training program that results in leaders, supervisors, and operators being fully qualified and dedicated to performing or supervising PMCS tasks correctly.

(3) Sufficient time blocked in the unit's training schedule specifically for the performance of operator PMCS on a weekly basis.

(4) Sufficient time blocked in the unit's training schedule specifically for the performance of unit level PMCS (-20 level scheduled services) based on time estimates provided by the maintenance officer/NCOIC.

(5) As few as possible unscheduled distractions that take equipment operators, maintenance personnel, and supervisors away during scheduled PMCS periods.

(6) The establishment of strict quality control procedures for repairs and scheduled services.

(7) All special tools, lubricants, and publications on hand to accomplish any PMCS task required by the applicable TMs at the unit level.

(8) Proper PMCS performance by the equipment operator will ensure early detection of faults and maintenance requirements.

2-6. Tactical maintenance

For maintenance under field/training exercise conditions, refer to FM 43-5. This field manual superseded FM 29-2 and FC 29-2J.

2-7. Vehicle recovery

FM 20-22 is directed toward both the leader and the technician. This field manual provides tactics, technique, and procedures on the use and employment of recovery assets. It also provides practical methods of recovering disabled or immobilized vehicles and returning it to operational status, or evacuate it to a place where it can be repaired, disposed of, or further disabled to prevent enemy capture of equipment.

2-8. Battle Damage Assessment and Repair (BDAR)

FM 20-30 provides specific doctrine and techniques for performing battlefield damage assessment and repair on equipment that has been disabled by enemy action or mechanical malfunctions. BDAR is to return disabled equipment rapidly, especially combat vehicles, to the operational commander by expediently fixing, bypassing, or juryrigging components. BDAR restores the minimum essential combat capabilities necessary to support a specific combat mission or to enable the equipment to self recover. Depending on the repairs required, BDAR may be a temporary or permanent repair.

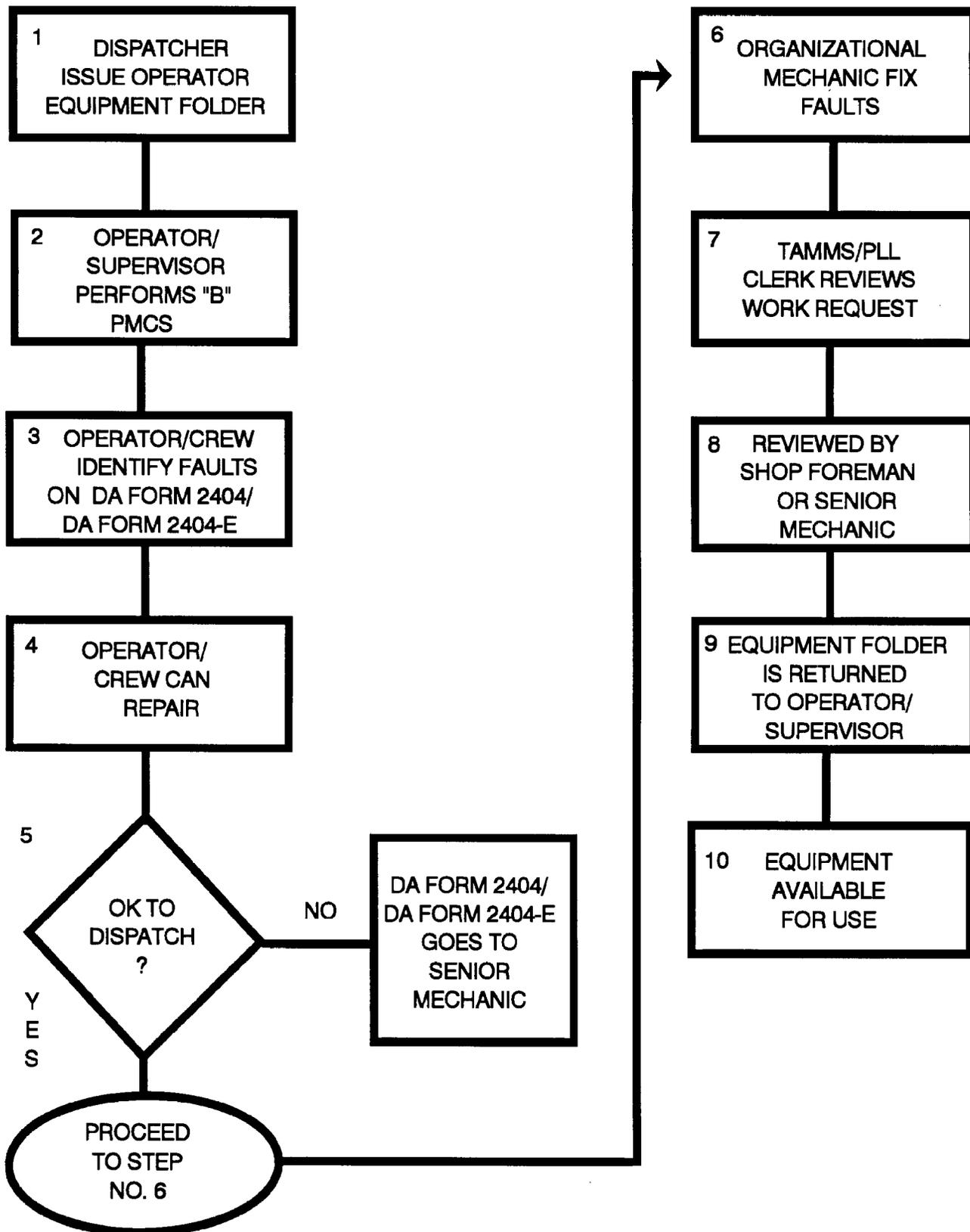


Figure 2-1. A typical company level maintenance workflow

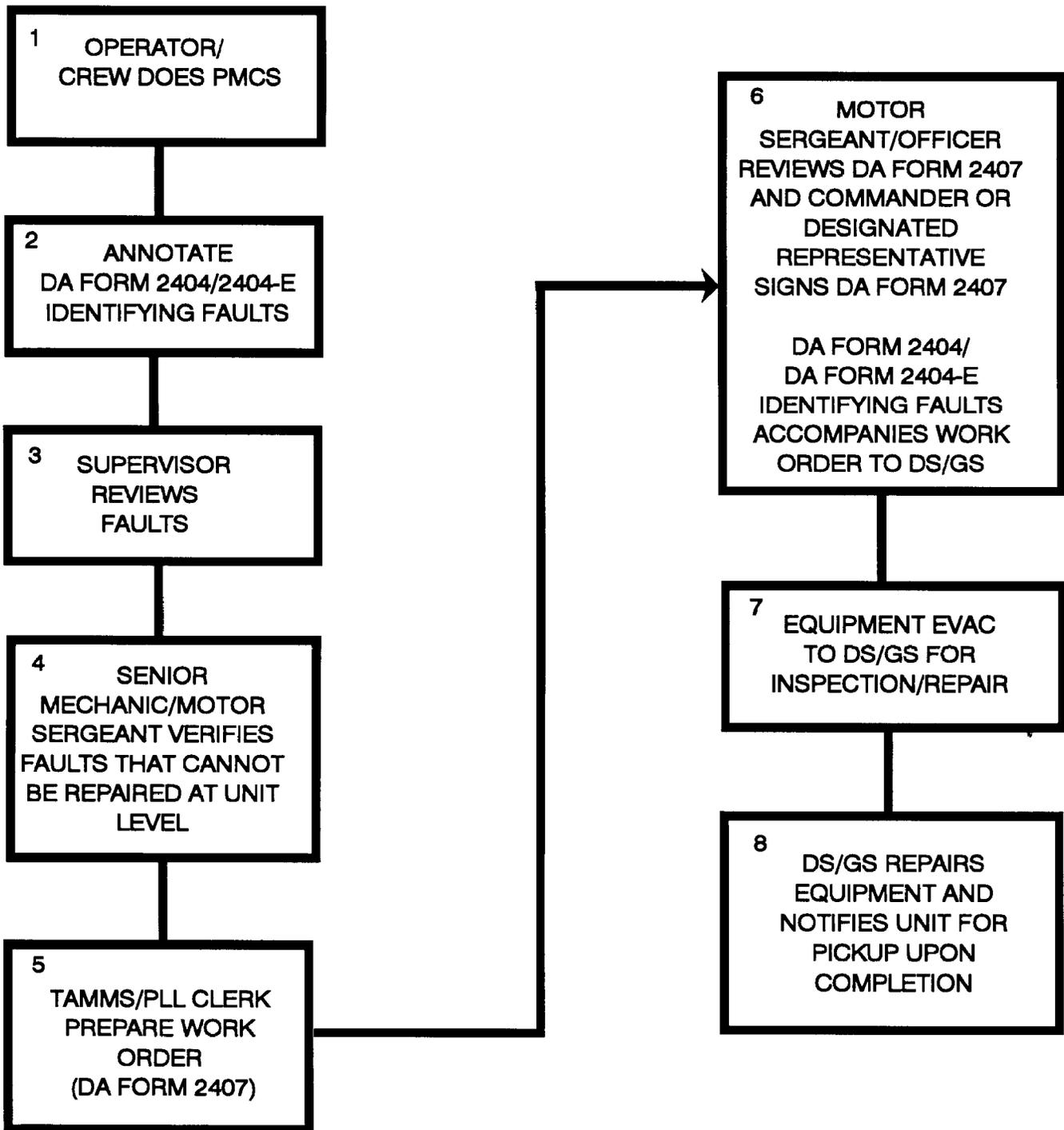


Figure 2-2. Organization level repair workflow to DS/GS

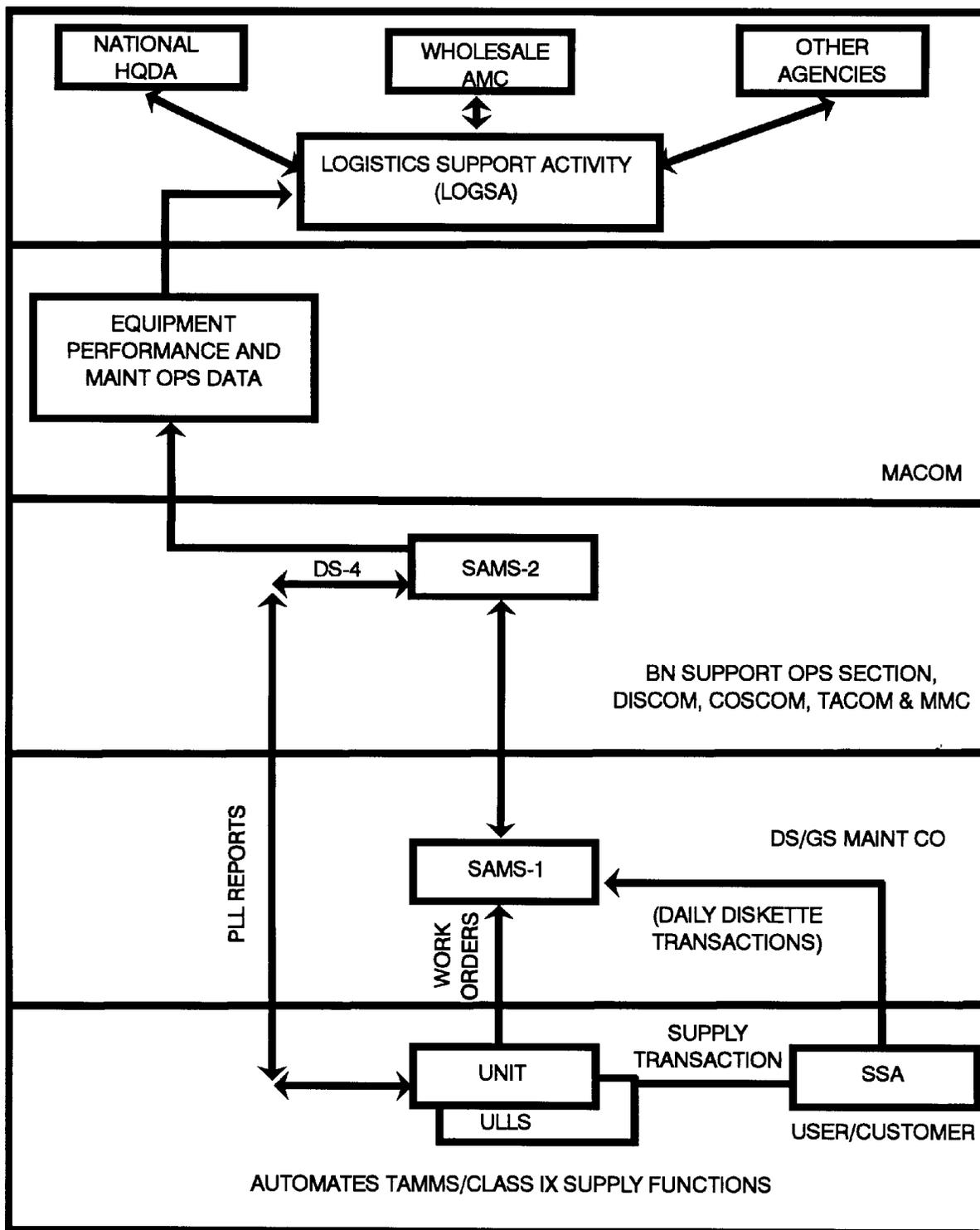


Figure 2-3. ULLS diskette daily workflow

Chapter 3 Unit Level Maintenance Management

3-1. Maintenance managers

Unit level maintenance managers are those officers and noncommissioned officers that plan, organize, direct, coordinate, and control unit level maintenance assets. The most influential maintenance manager in a unit is the commander. However, most management tasks are accomplished by the motor officer/motor sergeant or maintenance team chief at company/troop/battery level. At battalion/

squadron level the maintenance officer/technician and motor sergeant are the key maintenance managers. Refer to figure 3-1 for unit maintenance hierarchy.

3-2. Maintenance standards

To achieve the maintenance standards required by AR 750-1, chapter 1, which is the TM -10/20 PMCS standard, maintenance managers should focus on the following:

- a. The unit commander's maintenance requirements for accomplishing the unit's tactical mission.