

## CHAPTER THREE

# TECHNICAL ASSISTANCE AND EXTERNAL SUPPORT

### 3-1. INTRODUCTION

Technical assistance involves providing advice and assistance. It also provides training on the installation and operation, modification, maintenance, recovery, and evacuation of equipment. This improves operations and conserves resources.

Experience shows that for every man-hour devoted to effective technical assistance, many man-hours of repair are saved at a later date. The maintenance unit may provide technical assistance using its own resources or arrange for additional support from the maintenance assistance and instruction team (MAIT), the formal logistics assistance program, or other maintenance units,

### 3-2. TECHNICAL ASSISTANCE TEAMS

**Organization.** A technical assistance team may be composed of one or more individuals. A large team may have an officer in charge, a senior noncommissioned officer, and representatives from various maintenance and supply sections. Personnel assigned to technical assistance teams must have a broad knowledge of both unit and support supply and maintenance operations. They must be tactful and aware of the importance of developing a high degree of cooperation between the using organization and the supporting unit.

**Functions.** Functions of the technical assistance team include, but are not limited to, the following:

- Advising the supported unit commander in the accomplishment of the responsibilities for unit maintenance and repair parts supply.

- Advising the using unit commander on the efficient use of materiel and on equipment serviceability status.
- Determining the nature and scope of maintenance support required so that a properly manned and equipped MST can be sent for on-site assistance.
- Discussing and resolving mutual problem areas regarding personnel, equipment, or operational procedures and policies.
- Determining what technical instruction and training assistance is needed by unit repair parts supply and maintenance personnel.
- Arranging and scheduling instruction or required technical assistance services to be provided by MSTs.
- Documenting technical assistance requirements for the guidance of subsequently dispatched MSTs.
- Helping the unit commander evaluate condition of equipment and the effectiveness of the maintenance program and formulate required remedial action.

**Common Services Provided.** Examples of common technical assistance team services include--

- Determining condition of user's equipment by courtesy inspections.

- Scheduling future maintenance support requirements.
- Reviewing the status of outstanding maintenance requests or supply requests.
- Coordinating procedural changes, SOP revisions, repairable exchange lists.
- Interpreting new technical procedures.
- Assisting in establishing an initial PLL or updating an existing PLL.
- Following up on supply requirements to ensure that the units have repair parts and cleaning and preserving materials needed for maintenance.
- Assisting in warranty claim actions.

### **3-3. MAINTENANCE ASSISTANCE AND INSTRUCTION TEAM PROGRAM (MAIT)**

The MAIT program complements the technical assistance described above. It also helps commanders identify and solve materiel readiness problems. The MAIT program is set up at the division level, AR 750-1 provides guidance and direction for conducting the program.

The MAIT visit maybe requested by a unit requiring assistance or by a higher headquarters. When arranging for the team visit, the commander should advise the team chief of known problem areas so that proper team makeup can be determined prior to the visit. The conduct of the visit itself emphasizes “what to do and how to do it” in those areas where improvements are needed. After the visit, the team chief advises the commander on recommended corrective actions. The MAIT does not score or provide a rating of the unit. Actions required to correct deficient areas, not within the responsibility of the unit commander, are followed up by the MAIT with the units/activities concerned.

The MAIT assistance and instruction include--

- Equipment condition and serviceability.
- Use of tools and test equipment.
- Repair parts supply to include RX.
- Maintenance personnel management and training.

- Records and reports management.
- Publications.
- Facilities/shop layout.
- Quality control procedures.
- New doctrine and techniques.
- Shop operations.
- PM and equipment repair.
- Unit readiness reporting.
- Modification work orders (MWOs).
- Calibration.
- Administrative storage.
- Unit training.
- Safety.
- Unit SOP.

### **3-4. FORMAL LOGISTICS ASSISTANCE PROGRAM**

Technical assistance beyond support unit capability may be provided by United States Army Materiel Command (AMC) military and civilian specialists as well as contract personnel. AR 700-4 provides the details of the formal logistics assistance program. Both military and civilian logistic assistance representatives deploy with the division and can operate as far forward as METT dictates.

### **3-5. TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE), CALIBRATION AND REPAIR**

The Army TMDE support system is based upon the policies and responsibilities in AR 750-25 and the procedures in TB 750-25. The responsibility for general staff supervision of the Armywide TMDE program is assigned to the Deputy Chief of Staff for Logistics, HQDA. The AMC manages, directs, and controls the Armywide TMDE C&RS program.

AMC will maintain the US Army TMDE Support Group (USATSG), Redstone Arsenal, Alabama, to:

- Exercise Armywide technical control of the TMDE support program,
- Exercise command and control of all maintenance battalions (TMDE), maintenance companies (TMDE), and area calibration and repair centers (ACRCS).

### 3-6. CLASSIFICATIONS OF TMDE

The USATSG, through its subordinate elements, provides single source C&RS for all general purpose TMDE (TMDE-GP) and that special purpose TMDE (TMDE-SP) as designated in TB 43-180. The use of the term “general purpose” TMDE in this manual refers to those items of TMDE that can be used without modification for support operations of more than one end item or system. “Special purpose TMDE” refers to TMDE designed specifically for support on one system or end item. To use TMDE-SP for support of more than one end item or system would require modification to the TMDE. Maintenance of TMDE-SP not identified in TB 43-180 as requiring USATSG support is the mission responsibility of the system dedicated DS maintenance unit.

### 3-7. TMDE SUPPORT CONCEPTS

TMDE support normally will be based on the concept that repair should be done by the element designated in TB 43-180 as being responsible for calibration support. TMDE support will be as follows:

- All TMDE owners or users will accomplish unit maintenance on organic TMDE.
- Maintenance companies (TMDE) will provide calibration and/or repair support for all TMDE-GP and that TMDE-SP designated in TB 43-180 as requiring USATSG support.
- DS/GS and aviation intermediate maintenance (AVIM) units will provide support service for organic and supported units’ TM DE-SP designated in TB 43-180 as requiring DS/GS and AVIM unit calibration and/or repair.

*NOTE: Certain TMDE-SP may require C&RS to be done by both the USA TSG and a DS/GS or A VIM unit on a coordinated*

*basis. For example, a large TMDE-SP console may include some TMDE-GP which would normally be serviced by an area TMDE support team (ATST). The remaining components of the console are TMDE-SP and require specialized training to accomplish repair. In this case, the ATST and DS/GS or AVIM unit personnel will work together to accomplish the required*

C&RS.

### 3-8. DIVISIONAL TMDE SUPPORT

The maintenance company (TMDE) emphasizes responsive C&RS to supported units. This support is provided primarily by ATSTs, with contribution from the area calibration laboratory (ACL). All ATSTs of a company are considered to be mobile because they have organic transportation. ATSTs are assigned a mission of dedicated divisional support or geographical area support. An example of dedicated divisional support is the attachment of an ATST to a divisional CSS battalion. This ATST would provide C&RS to all divisional units and, where circumstances warrant, to those nondivisional units operating within the division area. A geographical area support mission can be illustrated by the attachment of an ATST to an area support group. The ATST would provide support to all divisional and nondivisional units within or passing through the assigned geographical area.

The ATSTs are mobile and air transportable (when required) to support unit sites. Each team is equipped with necessary tools, one set of secondary transfer standards, a TMDE repair set, repair parts, and expandable vans to transport equipment. The 5-ton vans, when expanded, provide a suitable work area for TMDE C&RS.

ATSTs may perform TMDE support at direct maintenance unit locations. These units are normally provided 30-days advance notice of scheduled ATST visits. The TMDE located at using units requiring support is transported to its maintenance unit. When established schedules conflict with using unit operational requirements, the unit may be rescheduled. Under exceptional circumstances the ATST may perform C&RS at the using unit if it is deemed impractical by the ATST chief to bring certain items requiring service to the ATST.

The structure of an ATST does not allow for operations as an autonomous unit. It is totally de-

pendent upon the unit of attachment for messing support and, to a lesser extent, for communication and POL support and maintenance of organic vehicles. Its defensive capability is limited to small arms. The host unit is responsible for providing the support required by the ATST and integrating it into the defensive plans.

### 3-9. TMDE SUPPORT COORDINATOR

All using unit commanders are responsible for management of their TMDE and play an active role in the TMDE C&RS program. A commander's actions influence the quality of TMDE support the unit receives and the ability of the TMDE to support mission requirements. A key figure in a commander's TMDE support program is the TMDE support coordinator,

Each divisional unit that uses TMDE will designate (in writing) a TMDE support coordinator. The coordinator will be the central point of contact for TMDE calibration and repair matters concerning the unit's organic TMDE. The coordinator will be responsible for and have authority to monitor the divisional units' C&RS program. That program will be consistent with AR 750-25, AR 750-43, and TB 750-25.

ATSTS work with the supported unit's TMDE support coordinator to maintain accuracy of the automated data base and automated printouts. Recall listings from the supporting ATST tell the using unit when specific items should be presented for calibration. Delinquency listings are also provided which reflect the items that should have been presented for calibration, but were not.

Calibration scheduling is an important aspect of using unit TMDE management. TMDE that has not been calibrated by the calibration due date shown on the DA Label 80, Calibrated Instrument Label, cannot be used until it is calibrated. This may greatly affect unit readiness if the number of individual items of TMDE is low. Batching of TMDE has a similar effect on readiness.

To avoid these adverse effects, the TMDE support coordinator should spread out the calibration schedule for a particular type of item over a period of time. Calibration intervals may be reduced when

required to improve scheduling. The coordinator should be alert to special needs for major field exercises and other critical periods when the unit must be at peak readiness.

### 3-10. USING UNIT PROCEDURES

The unit TMDE support program is based on the TMDE on hand in the unit. Property records and hand receipts indicate what should be in the unit.

DA Form 2416, Calibration Data Card, is used to enter individual TMDE items into the program. The card is prepared according to TB 750-25. It identifies the item by nomenclature and serial number and states whether or not calibration is required. Calibration and repair requirements are contained in TB 43-180. If calibration requirements for an item cannot be found, DA Form 3758, Calibration and Repair Requirements Worksheet, is completed according to TB 750-25 and is used to enter the item into the program.

Unit maintenance of TMDE is a using unit responsibility. The MAC for the equipment states what maintenance is to be performed. This is limited to cleaning, servicing, and minor repairs, such as replacement of fuses, lamps, knobs, filters, screws, and so forth.

The ATST's external SOP must be followed when presenting TMDE for calibration or repair. In some instances, the TMDE must be accompanied by adapters, cables, accessory items, and technical or manufacturer's manuals. DA Form 2402, Exchange Tag, is completed and attached to each item presented for calibration. The using unit retains a copy of this form as a receipt and exchanges this receipt when service has been completed. For repair, DA Form 2407/5504, Maintenance Request, is used. The receipt copy is retained by the using unit until the TMDE is returned.

When a using unit moves to a new support area, TMDE support is shifted to a different ATST. The using unit is responsible for coordinating the shift in support requirements with the losing and gaining support organization.

Using units must ensure that TMDE is picked up promptly when services have been completed.

### 3-11. DMMC PROCEDURES

The materiel section of the DMMC (MATO in the LID) provides central management of the division's TMDE calibration and repair program. This section:

- . Assists unit TMDE support coordinators in identifying materiel which requires calibration or repair.
- Schedules C&RS in coordination with the supporting ATST or DS/GS/AVIM units.

### 3-12. DS/GS/AVIM UNIT PROCEDURES

TMDE support procedures for organic TMDE of DS/GS/AVIM units are the same as those outlined for using units. However, these units provide their customers C&RS for selected items of TMDE-SP.

TB 43-180 determines if an item of TMDE-SP is supported by the DS/GS/AVIM maintenance unit or the ATST.

The DS/AVIM unit provides customers the same type of support for TMDE-SP within their responsibility as the ATST. This includes establishing and maintaining an instrument master reference file (IMRF), providing supported units with a recall schedule, providing C&RS, and informing supported units of delinquent TMDE-SP.

### 3-13. ARMY OIL ANALYSIS PROGRAM (AOAP)

The AOAP is part of a DOD peacetime program designed to analyze equipment lubricant condition and to detect impending component failure through periodic evaluation of oil samples. Oil analysis provides a diagnostic tool which determines the internal condition of engines, gearboxes, transmission, and other oil-lubricating systems and components. It also permits on condition oil change (OCOC) where applicable. Using the OCOC technique, oil is changed on the basis of oil quality rather than a fixed time or mileage interval. AOAP operations will be suspended in combat operations,

### 3-14. PROCEDURES

**Sampling Requirements.** The AOAP requires periodic sampling. The sampling frequency varies with equipment. For example, combat vehicles are sampled after every 25 hours of operation or 30 days, whichever occurs first. Tactical wheel vehicles are sampled every 100 hours or 60 days. To determine sampling requirements for specific items, consult

DA Pamphlet 738-750 for nonaeronautical equipment and TB 43-0106 for aeronautical equipment.

**Special Samples.** Special samples are taken by unit maintenance personnel as outlined in DA Pam 738-750 and TB 43-0106.

**Sampling Supplies, Forms, and Records.** DA Pam 738-750 and TB 43-0106 lists the supplies required for the AOAP oil sampling operations. The AOAP uses the following forms and records:

- DA Form 2407/5504, Maintenance Request.
- DA Form 2408-20, Oil Analysis Log (replaced by ADP printouts if the laboratory is automated).
- DA Form 3254-R, Oil Analysis Recommendation and Feedback.
- DD Form 314, Preventive Maintenance Schedule and Record.
- DD Form 2026, Oil Analysis Request.

**Laboratory Analysis.** The functions of the oil analysis laboratory are described in DA Pam 738-750, TM 38-301, and TB 43-0106. The Army has 24 AOAP laboratories used for routine oil analysis, and 5 depot laboratories used for quality assurance testing of reconditioned materiel. Eighteen of the 24 are located in CONUS and the remaining 6 are in OCONUS. In accordance with Joint Oil Analysis Program (JOAP) requirements, Army equipment is also supported by the Navy and Air Force oil analysis laboratories. The Navy laboratory at Pearl Harbor, Hawaii, provides support to U.S. Army Western Command, Hawaii. Korean National personnel, employed by the U.S. Army, analyze samples from Army aircraft at the Air Force laboratory at Osan Air Base, Korea. Laboratory support for the U.S. Army South, Panama, and units deployed in Central America is provided by Army civilian personnel utilizing the JOAP laboratory at Howard Air Force Base, Panama.

**Field Feedback.** When maintenance action is indicated by the analysis, it is essential to provide feedback information to the laboratory. This refines procedures, increases prediction accuracy, and recommends design changes to items showing a high failure rate. The DA Form 2408-20, or ADP printout, must accompany the unserviceable component from the DS unit to the GS or depot turn-in point.

DA Form 3254-R is used by the laboratory to provide specific recommendations. This same form is used by the unit to provide feedback to the laboratory.

When direct support level maintenance is part of the recommendation, the unit submits the equipment to support maintenance and encloses a copy of DA Form 2407/5504 with the DA Form 3254-R enclosed.

### **3-15. WARRANTY CLAIMS**

When it is in the Army's best interest, certain items are acquired with a warranty from the manufacturer. The warranty is normally applicable for a specific period of time or mileage. It protects the government against design deficiencies or poor workmanship during the period it is in effect. When the end item, component, part, or assembly covered by the warranty fails, a warranty claim must be initiated to recover the costs involved.

### **3-16. THE ARMY WARRANTY PROGRAM**

The decision to acquire or apply a warranty is made on a case-by-case basis during the acquisition process. A warranty decal is used to identify items covered by warranty. Information concerning the warranty and warranty use, data submission, and warranty assistance is included in material fielding plans, technical bulletins, or other media. The acquiring command is responsible for developing procedures to put the warranty into effect. The major command assigned the item for use is responsible for implementing the prescribed procedures. DS maintenance units provide the points of contact for executing the established procedures.

Details of the Army warranty program are found in AR 700-139. Warranty claims are submitted using DA Form 2407/5504 (DA Pam 738-750). Warranty actions will be suspended during combat operations.

### **3-17. WARRANTY APPLICATION**

Warranty actions are reported IAW DA Pam 738-750, implementing instructions, and AR 700-139. Unit readiness and mission effectiveness take priority in case of conflict with warranty application. If the support activity cannot get an effective response through the warranty process, they should fix first and settle later, using bill back procedures when available.

### **3-18. WARRANTY CLAIMS ACTION**

When components, parts, or assemblies of end items are identified as being defective and are covered by a manufacturer's warranty, a warranty claim action is initiated to obtain reimbursement for maintenance man-hours required to replace the defective items. Claim action may be initiated at all levels of maintenance.

Support maintenance activities are the responsible points of contact between the originator of warranty claim actions and the national inventory control point (NICP) serving as the DA representative with the contractor. All warranty actions, settled or unsettled, are reported to the national level.

When it has been determined that a component, part, or assembly of an end item under warranty is defective because of design deficiency or poor workmanship, the defective component, part, or assembly is identified as a warranty claims exhibit. DA Form 2402 is used to tag all exhibits. Instructions for completion of this form are contained in DA Pam 738-750.

DA Form 2407/5504 is used to submit the warranty claim. The form is filled out according to DA Pam 738-750. The remarks block is used to provide details concerning the cause of the failure, identification of the end item, and the applicable warranty.

A receipt copy of the DA Form 2407/5504 authorizes immediate replacement action through supply channels by the claim originator.

Support maintenance activities are responsible for prompt handling of all warranty claim actions. This includes processing approved claim actions back to the originator and the processing of funds reimbursed for cost of labor required to replace the defective components, parts, or assemblies.

### **3-19. MODIFICATION WORK ORDERS**

MWOs are DA publications which provide authority and instructions for the modification of Army materiel. MWOs are identified in DA Pam 750-10. Equipment may be modified to:

- 1 Increase safety of personnel.
- 1 Prevent damage to equipment.
- 1 Increase combat and operating effectiveness.
- 1 Improve equipment compatibility.
- 1 Improve and simplify maintenance.

Types of MWOs. MWOs may include conversion, field fix, retrofit, remanufacture, or engineering change. They are further classified by an urgency code which describes the effect on the end item and the time frame for application of the MWO. The classification, effect on equipment, and time frames are shown in Table 3-1.

**MWO Control and Application.** Responsibility for application of MWOs is with equipment sponsoring agencies at DA level. These agencies maintain data on MWO requirements and develop and execute plans for MWO application. They verify the national level MWO data base annually by reconciling listings with user commands. Information on application of MWOs is provided by MWO advance information support list allowance card (SLAC)

decks, The actual application of MWOs is negotiated with the user major Army command (MACOM). This results in a memorandum of understanding (MOU) which gives the details for the MWO application. The MOU specifies any DS/GS unit application responsibilities for the MWO. A point of contact for each MOU is assigned at MACOM level. Further details regarding the DA MWO program are in AR 70-15.

### 3-20. DIVISION MWO OPERATIONS

The DMMC maintains and operates the division MWO operations and is responsible for MWO accounting procedures, maintaining the status of all MWOS for equipment, and directing the order of completion for MWOs.

Table 3-1. MWO classifications.

CLASSIFICATION	EFFECT ON EQUIPMENT	TIME TO APPLY
URGENT	DEADLINES	IMMEDIATELY
LIMITED URGENT	LIMITED OPERATION	120 DAYS
NORMAL	NONE	12 MONTHS