

Chapter 5

Medical Equipment Maintenance

Medical equipment maintenance is a primary task of Army MEDLOG and is critical to ensure patient safety and overall AHS support. Medical treatment of wounded Soldiers in the deployed force relies heavily on the AHS's ability to rapidly respond, project, and maintain the latest medical equipment on the battlefield. Technology used to develop medical equipment changes rapidly. This new technology requires well trained and highly skilled health service maintenance technicians (Area of Concentration 670A), biomedical equipment specialists (Military Occupational Specialty 68A), DOD civilians, and contractors for life cycle and maintenance management, field and sustainment maintenance support, and calibration verification. This chapter describes medical equipment maintenance support provided within an area of operations to include external CONUS-based support for all medical units in theater.

Note. In accordance with 10 USC, medical equipment maintenance is the responsibility of TSG. Therefore, other than operator preventive maintenance checks and services (PMCS), no other military occupational specialty is authorized to perform scheduled or unscheduled medical equipment maintenance, calibration, and verification and/or certification on medical equipment.

SECTION I — ROLE OF MEDICAL EQUIPMENT MAINTENANCE

5-1. Medical equipment maintenance and repair supports the readiness of Army medical elements by sustaining systems and equipment as effectively, responsively, economically, and as close to the point of use as the situation permits. Materiel readiness is defined as the availability of materiel required by a military organization to support its wartime activities or contingencies, disaster relief (floods, earthquakes, and so on), or other emergencies. Maintenance of medical materiel includes medical maintenance engineering and medical maintenance operations.

ARMY MEDICAL DEPARTMENT MAINTENANCE SYSTEM

5-2. Medical equipment maintenance operations are primarily based on the policies contained in AR 750-1, AR 40-61, TB MED 750-1, and SB 8-75-11. The specific objectives of the AMEDD maintenance system are to—

- Provide a more responsive maintenance system; improve operational readiness, and increase mobility and flexibility at the lowest overall cost.
- Establish a medical maintenance management structure through which maintenance can be performed effectively and economically ensuring the highest level of care available.
- Establish procedures where equipment is supported in peacetime as in war commensurate with available time and other resources.
- Optimize repair by component replacement of medical equipment.
- Integrate the forward support maintenance concept (AR 750-1) to minimize equipment maintenance service time.
- Establish equipment design criteria that emphasize modular design of end items that will promote the following maintenance priorities: repair forward, evacuate, and replace with medical maintenance regeneration enablers, if available.

Note. Authorized Army medical maintenance regeneration enablers include operational readiness float, repair cycle float, and Medical Standby Equipment Program items. Medical maintenance regeneration enablers involve positioning end items, components, assemblies, and subassemblies with the MLC and CSH for sustainment medical maintenance in support of theater operations.

5-3. Army transformation requires that the AMEDD has the capability to deploy powerful forces quickly, without a large logistics footprint. Army maintenance transformation consolidated the four-level maintenance system at the direct support level into a tiered two-level maintenance system, which consists of field and sustainment maintenance. The Army's two-level maintenance system (on or near system replacement and off system repair of components and end items) allows operating forces to continue with the mission. These two levels are key to keeping equipment in a mission-ready condition, restoring equipment to a serviceable condition, and providing approved equipment modifications. The goal of the two-level maintenance system is a simplified structure that provides a reduced repair-cycle time with greater efficiency in all maintenance processes. See ATP 4-33 for additional information on Army maintenance operations.

FIELD MAINTENANCE

5-4. Field maintenance is the first function of the Army maintenance system. Field maintenance consists of *on-system maintenance, repair, and return to the user* including maintenance actions performed by operators. Field maintenance is often performed on or near the unserviceable piece of equipment or weapon system utilizing line replaceable units or modules and component replacement or repair (ATP 4-33). The greatest enabler of field maintenance is operator/crew PMCS. The operator/crew PMCS provides the most rapid identification of equipment faults and engagement of the maintenance repair system. Commanders are responsible for providing resources, assigning responsibility, and training their Soldiers to operator-level standards to conduct PMCSs. Commanders are also responsible for ensuring that adequate time is set aside for Soldiers to conduct operator-level PMCS. The basic task of field maintenance is to perform scheduled periodic services and other maintenance functions (TM 10 and 20 series publications, maintenance allocation charts, and/or the original equipment manufacturers service literature) required to attain a high level of operational readiness. All repair functions for medical equipment beyond operator or crew PMCS is the sole responsibility of the Area of Concentration 670A/Military Occupational Specialty 68A. Responsibilities include the requirement to—

- Schedule and perform PMCS.
- Perform electrical safety inspections and tests, calibration, verification, and certification services.
- Provide diagnosis and fault isolation charts prior to evacuation. Emphasis is placed on early consideration of equipment replacement with medical maintenance regeneration enablers.
- Replace unserviceable components, modules, and assemblies as authorized by the maintenance allocation chart.
- Inspect by sight and touch external and other easily accessible components.
- Lubricate, clean, preserve, tighten, replace, and make minor adjustments.
- Requisition, receive, store, account for, and issue repair parts to include managing authorized stockage list/bench stock for medical equipment.
- Maintain a technical library for medical equipment.
- Perform technical inspections on new or transferred medical equipment in accordance with AR 40-61.
- Maintain required manual equipment files and automated equipment files in the medical equipment management AIS.
- Request, manage, maintain, and report medical maintenance regeneration enabler assets.
- Perform management and maintenance functions on PMI located within the operational area.
- Report materiel condition and status codes to include operational readiness in accordance with AR 700-138.

- Inspect items to verify serviceability.
- Report items rendered unserviceable due to other than fair wear and tear through the chain of command. Any equipment not located during scheduled services will be reported to the commander or property book officer monthly to ensure property accountability. If negligence or willful misconduct is suspected, repair will not be made until a release statement is received per AR 735-5.
- Determine economic reparability in accordance with TB MED 750-1.
- Repair unserviceable economically reparable end items. Equipment will be repaired and returned to the user.
- Provide proactive materiel readiness and technical assistance to unit maintenance elements including—
 - Visits to supported units on a regular basis.
 - Advice to supported units in proper methods for performing maintenance and related logistics support.
 - Coordination with supported units to perform technical inspections when requested.
 - Assistance to supported units on-site.
 - Area support to other field units and evacuate equipment requiring support to sustainment maintenance units, as necessary.

SUSTAINMENT MAINTENANCE

5-5. Sustainment maintenance is the second function of the Army Maintenance system. Sustainment maintenance consists of *off-system component repair and/or end item repair and return* to the supply system or by exception to the owning unit, performed by national level maintenance providers. The sustainment maintenance function can be employed at any point in the logistics chain. The intent of this level is to perform commodity-oriented repairs to return items to a national standard, providing a consistent and measureable level of reliability and to execute maintenance actions not able to be performed at the field level of maintenance. Sustainment maintenance supports both operational forces and the Army supply system (ATP 4-33). Ideally, sustainment maintenance activities (MLC and CSH) would support closest to the area of operations, however, the operational pace and technical requirements may dictate that sustainment maintenance activities are located in CONUS (depot) to provide the required repair support. Responsibilities include the requirement to—

- Diagnose, isolate, and repair faults.
- Repair selected line replaceable units and printed circuit boards in accordance with the maintenance allocation chart.
- Provide area maintenance support to include technical assistance and on-site maintenance as required or requested.
- Collect and classify Class VIII materiel for proper disposition.
- Operate cannibalization points, when authorized by the Army command, ASCC, or direct reporting unit (in accordance with AR 710-2).
- Evacuate unserviceable end items and components through the appropriate SSA.
- Fabricate or manufacture repair parts, assemblies, components, jigs, and fixtures when approved by the Army command, ASCC, or direct reporting unit.
- Request depot or manufacturer technical support as required.
- Repair all economically reparable components when the maintenance allocation chart F-coded-level repair will return the items to a serviceable condition. These items will be repaired and returned to the requesting maintenance or supply activity.
- Provide fabrication as identified by the appropriate TM.
- Provide overhaul and rebuild end items and components in support of the wholesale supply system and as *repair and return* actions.
- Perform special inspections, tests, and modification program actions.
- Perform maintenance services and functions for the wholesale supply system.

- Provide end items, components, and repair parts through established programs in support of both TOE and TDA medical units.
- Provide on-site medical maintenance contact repair teams and logistics assistance representatives to support BCTs and forward operating bases, as required.

5-6. Responsive maintenance is the result of the combined efforts of many individuals. The actions of these individuals are guided and influenced by maintenance factors common to all maintenance operations. These factors function like a chain. If one area is neglected, the overall system is weakened. The factors required for responsive maintenance include—command interest, management, supervision, skill, and resources. Refer to AR 750-1 and ATP 4-33 for additional information.

COMMAND INTEREST

5-7. This is the active involvement of commanders and supervisors at all levels of medical equipment maintenance operations for which they are responsible. The commander is responsible for the readiness of medical equipment assigned to the unit whether it is a reportable end item, subassembly, or component of a medical materiel set or MES. To ensure deployable readiness, commanders must provide written emphasis, set goals, objectives, and priorities in support of the maintenance program. Commanders are required to publish a commander's maintenance directive in accordance with TB MED 750-1. They must stay informed of maintenance requirements, status, and capabilities and provide guidance, motivation, and direction to unit personnel. The leadership or interest of unit commanders, supervisors, and maintenance managers helps to motivate personnel to accomplish the maintenance objectives. Commanders must also develop training plans that ensure appropriate personnel receive training and certification on equipment.

MANAGEMENT

5-8. Managers use available resources to accomplish the mission in the most efficient manner. Maintenance management involves all members of the chain of command, as well as designated individuals who manage the maintenance resources under their control in accordance with command supply discipline. The manager plans, organizes, directs, coordinates, and controls resources to accomplish the maintenance mission.

SUPERVISION

5-9. Maintenance supervisors ensure that personnel perform required tasks in a correct, safe, and timely manner. Supervisors also take an active interest in the training and welfare of their personnel. Supervisors should set goals to maximize the training and certification of section personnel on assigned equipment.

SKILL

5-10. Skill is the technical ability of personnel to perform the tasks required by their duty position. Skill development is important to all personnel but particularly to inexperienced Soldiers joining the unit. Commanders and supervisors must provide continuous technical training, licensing programs, and medical proficiency training to ensure that learned skills are sustained over time.

RESOURCES

5-11. Resources include personnel, publications, consumables, repair parts, medical maintenance regeneration enablers, tools, test, measurement, and diagnostic equipment, facilities, training, and time. Commanders and supervisors at all levels must ensure that their subordinates are adequately resourced to accomplish the mission they are assigned.

SECTION II — MEDICAL EQUIPMENT MAINTENANCE CAPABILITIES AND RESPONSIBILITIES AT EACH ROLE OF CARE

5-12. This section describes the medical equipment maintenance capabilities available to sustain deployed medical units at each role of care.