

TECHNICAL BULLETIN

**OPERATING GUIDE
FOR MTOE
MEDICAL EQUIPMENT MAINTENANCE**

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HEADQUARTERS
DEPARTMENT OF THE ARMY
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for TOE
Medical Equipment Maintenance

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CHAPTER 1

Introduction

Section I. General

1-1. Purpose

a. This operating guide provides policy and procedures used to manage and operate Table of Organizational Equipment (TOE) medical maintenance operations. Use it in concert with the directives and policies prescribed by Army regulations (ARs) and other regulatory guidance.

b. This operating guide also provides uniform guidance and direction to standardize operating procedures. Paraphrased in this bulletin are major policies and responsibilities established in other regulations to afford an understanding of their interaction with medical equipment maintenance procedures.

1-2. Applicability

This operating guide applies to all Army TOE organizations authorized Medical Equipment Repairers (MER), Military Occupational Specialty (MOS) 68A.

1-3. References

Appendix A lists related publications in addition to prescribed and referenced forms. These references provide the regulatory basis for the guidance contained in this bulletin. Maintenance activities will maintain a library of those publications used on a frequent basis, and be knowledgeable of the locations of less frequently used publications.

1-4. Explanation of abbreviations and terms

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

1-5. Standards of medical maintenance

Equipment used by medical personnel is of critical importance since its purpose is to save lives and prevent suffering of the sick and wounded. Therefore, the highest standards of maintenance for medical equipment are mandatory.

Section II. Responsibilities

1-6. Commanders

Maintenance of equipment is a command responsibility. Adequacy and completeness of a unit's maintenance program are a reflection of command interest. Maintenance operations, regardless of the unit size or mission, are analyzed on nine factors that can affect maintenance: command, personnel, time, tools, repair parts, records, publications, facilities, and communications. Command is the most critical factor since it is the only factor that has direct influence on each of the others. Commanders will:

a. Publish and make compulsory a directive emphasizing the responsibilities of equipment operators to perform effective operator maintenance, and the accountability of supervisors and leaders to ensure operators are properly trained and competent in the use and care of medical equipment.

b. Allocate adequate time for equipment operators (EO) to perform operator preventive maintenance services on a scheduled basis. Operator level maintenance should be included in the unit's training schedule.

c. Ensure current operator manuals for all medical equipment are on hand and readily available to the operators.

d. Evaluate the performance of operator and unit maintenance programs through inspections. Correct deficiencies found during inspections.

e. Establish periodic in-service and/or formal training in operator maintenance programs for operators.

f. Prevent the abuse of materiel under user control. Investigate the evidence of abuse and take corrective action.

g. Program periodic in-service training, formal Army training, and/or manufacturer training for equipment maintainers, particularly for new equipment introduced into the activity.

h. Use assigned MERs for medical maintenance duties. The MER should not be assigned additional duties that may adversely affect the maintenance posture and readiness of medical equipment.

i. Make available the resources (i.e. tools, parts, and test equipment) necessary to maintain the organization's medical equipment.

j. Provide maintenance services to associate and subordinate activities on a scheduled basis.

k. Provide the best maintenance facilities possible. Arrange maintenance facilities to efficiently use the allotted space. The shop should be as centrally located as possible, be accessible, and have ample, secure, storage space for repair parts, supplies, tools, test equipment, and equipment awaiting repair and/or parts.

l. Maintain the appropriate medical equipment maintenance records IAW TB 38-750-2, *Maintenance Management Procedures for Medical Equipment*, or approved automated equipment management system.

m. Maintain organization's medical equipment in a fully mission capable status IAW AR 220-1, *Unit Status Reporting* and AR 700-138, *Equipment Readiness Reporting*.

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n. Medical equipment repairers should be included in the Medical Proficiency Training (MPT) program. Participation should not detract from the unit's medical maintenance posture.

o. Provide communication capability to ensure DA approved automated medical equipment maintenance and performance reporting procedures are achieved. To the maximum extent possible, medical maintenance automation systems should be provided broadband access to ensure effective communication is attained.

1-7. Maintenance managers

The senior medical equipment repairer will accomplish organizational maintenance for medical equipment in a timely, economical, and professional manner. Due to ever-changing operational requirements and conditions, effective maintenance management requires leadership, planning, organization, assignment of responsibilities, functions and resources, direction, and flexibility. Management of resources (tools, test equipment, standby equipment, repair parts, time, and personnel) should be a daily concern. All resources must be present in sufficient quantity when needed to accomplish the maintenance mission. The establishment of priorities is a primary task. Managers will:

a. Attain the basic concepts, objectives, and policies of The Surgeon General for the maintenance of medical equipment.

b. Effectively achieve the maintenance of Army-owned or supported medical materiel throughout the equipment's life cycle.

c. Execute maintenance programs for the repair, preventive maintenance checks and services (PMCS), electrical safety testing and calibration/verification/certification (CVC) of medical materiel.

d. Establish Standing Operating Procedures (SOPs) for the operation of the maintenance activity IAW command guidance. See appendix C which addresses SOP requirements and the applicable appendix for a sample SOP depending on the type of unit assigned.

e. Review internal and external SOPs minimally every 18 months and update to reflect changes in DA maintenance policies.

f. Provide planning, guidance, and assistance to other organizational elements that impact on the maintenance mission. This includes providing guidance and assistance to:

(1) Commanders and staff in the development of medical maintenance related educational and training programs for equipment operators and assigned MERs;

(2) Personnel Division (S-1) in the timely reporting of projected personnel losses.

g. Establish a system for identifying defective equipment to alert potential users. Use of equipment serviceability tags DD Form 1577 and DD Form 1577-2.

h. Keep Commanders and staff informed on the status of medical equipment maintenance and associated programs.

i. Establish a master file of both operator and maintenance manuals in the maintenance activity for all medical equipment. Maintenance literature can be in either paper or electronic format.

j. Establish a functional file system to ensure maintenance records are maintained.

k. Establish and maintain a library of current administrative publications needed in the management of the maintenance activity.

l. Facilitate medical equipment repairer participation in a Medical Proficiency Training (MPT) program.

m. Identify activities requiring medical maintenance support from your activity.

n. Identify the activity responsible for providing your next level of medical maintenance support.

1-8. Supervisory/leader personnel

Although supervisory duties and responsibilities are inherent in the management of all sub-functions of a medical equipment maintenance activity, those listed herein pertain primarily to maintenance and repair operations. Supervisors will:

a. Ensure the assignment of scheduled and unscheduled workloads to qualified repairers commensurate with their training and skill level.

b. Maintain timely and informative communications with medical equipment operators/hand-receipt holders concerning maintenance services.

c. Ensure the interpretation and application of maintenance service procedures are according to manufacturer's specifications and instructions.

d. Ensure individuals are knowledgeable of regulatory requirements such as Center for Devices and Radiological Health (CDRH), Codes of Federal Regulation (CFR) and National Fire Protection Association (NFPA) codes.

e. Ensure MERs are knowledgeable of hazard communications (HAZCOM), lockout/tagout and other applicable Occupational Safety and Health Act (OSHA), Department of the Army (DA), and local safety program requirements.

1-9. Medical Equipment Repairers

Maintenance services must be accomplished within established guidelines in a timely, professional manner. Repairers will:

a. Adhere to safety procedures during maintenance operations.

b. Bring unsafe equipment operations to the attention of user/operator personnel and their supervisors, by identifying defective equipment and alerting potential users.

c. Maintain accountability of entrusted resources. Of significant importance is the availability and accountability of time and effective man-power utilization. See chapter 3 for instructions on accountability of time and use of timesheets.

d. Perform PMCS and CVC services according to the manufacturer's instructions or Army technical manuals (TMs). Perform electrical safety inspections and testing IAW NFPA 99 and this bulletin.

- e. Ensure documentation and associated maintenance forms are legible and in compliance with local SOPs and other applicable directives.
- f. Assume personal responsibility for identifying and pursuing professional or technical training and career development.

1-10. Equipment Operators

The range and complexity of medical equipment used to provide healthcare requires that operators and their supervisors be responsible for their portion of the activity maintenance program. The operators and/or supervisors will:

- a. Perform before, during, and after operation maintenance tasks according to TMs and manufacturers' instructions utilizing DA Form 2404. Operator tasks usually consist of the care and cleaning of exterior surfaces, components, and accessories. Operator tasks also include the replacement of bulbs, tubing, etc., that are easily accessible and do not require tools or test equipment.
- b. Promptly report malfunctioning equipment to immediate supervisor and the supporting medical maintenance activity.
- c. Initiate a maintenance request for any maintenance services beyond those authorized as part of the operator's daily operations.
- d. Maintain operator manuals for all medical equipment.
- e. Maintain accountability of medical equipment and sets.

Section III. Maintenance Publications and Directives

1-11. Commander's implementing directives

Commanders will publish a maintenance support directive for use by their customers and supported activities.

1-12. Standing operating procedures

- a. Each activity having an organic medical maintenance capability will publish an internal SOP. The internal SOP will designate individual responsibilities and, as a minimum, will provide instructions for the performance of maintenance tasks related to the areas identified in appendix C.
- b. Each maintenance activity will develop and publish an external SOP. This SOP will establish the procedures a customer must follow when acquiring maintenance support.

1-13. Desk reference manuals

- a. In addition to the internal SOP, the maintenance activity should develop a desk reference for each MER's use. Consider the development of a desk reference manual for repair parts, tool room operations, and automated record keeping procedures.
- b. Desk reference manuals give a person performing routine day-to-day tasks the detailed instructions necessary to complete the tasks with the least amount of supervisory assistance. The manual should contain step-by-step procedures in sufficient detail to enable a newly assigned repairer to perform assigned duties.
- c. Providing adequate instructions and sample formats in a desk reference manual results in less time being required by the supervisor to train new personnel. Appendix D lists suggested items for inclusion in each desk reference manual.
- d. The repair parts and automated record keeping procedures desk references provide details to the extent that other personnel could assume these duties in the event assigned personnel are replaced.

Section IV. Maintenance Management

1-14. Management

- a. Maintenance management is the process of establishing objectives to carry out maintenance responsibilities. Maintenance management consists of those continuing actions of planning, organizing, directing, coordinating, controlling, and evaluating the use of personnel, funds, and facilities to accomplish missions and tasks.
- b. A prime management objective is to ensure optimal managerial control of critical maintenance resources. Accomplish this objective by establishing standards of performance for operational elements and a management data collection and reporting system for measuring and evaluating each medical maintenance activity's performance.

1-15. Management sub-functions

Shop management is composed of three basic sub-functions: supervision and administration, workload control, and maintenance and repair operations.

- a. Supervision and administration.

(1) Supervision is the element of management that makes the organizational maintenance facility productive by effectively managing the resources available to accomplish the maintenance mission. It consists of forecasting requirements and planning for the acquirement of resources used in the performance of the maintenance mission (i.e., funds, personnel, supplies, repair parts, tools, TMDE, publications, and facilities).

(2) Administration includes the tasks related to obtaining resources, maintaining equipment historical records, providing performance evaluation and reporting, man-hour accounting, and maintaining reference files. Also included are those tasks that are indirect to the physical performance of maintenance services and/or repair actions.

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b. Workload control.

(1) Maintenance managers determine work requirements and prioritize workload in accordance with the resources and capabilities available.

(2) The automation maintenance system should allow retrieval of maintenance reports and outputs to forecast scheduled and unscheduled services requirements. The types of reports available should include:

(a) Unscheduled Work Order Register (Listing) - Provides maintenance data used to prioritize the workload and sufficient information to determine repair limitations;

(b) Monthly Scheduled Service Work Order Listing - Provides a list of monthly scheduled service work orders for equipment due services;

(c) Cancelled/Delinquent Work Order – Provides a list of monthly scheduled service work orders that were not accomplished IAW the regulatory guidance; and

(d) Maintenance Performance Report - Provides statistical data to evaluate overall maintenance performance.

c. Maintenance and repair operations. Chapter 2 encompasses the aspects of maintenance and repair operations in detail.

(1) Maintenance and repair operations are the physical performance of those tasks involved in completing scheduled and unscheduled maintenance services.

(2) The effectiveness of the maintenance and repair operation program is dependent on the other maintenance management sub-functions. Administrative tasks must be accomplished before and after the performance of maintenance services.

1-16. Authorized automated maintenance management system

a. All TOE medical activities with an organic maintenance capability will utilize the authorized Standard Army Management Information System (STAMIS) to manage their equipment maintenance program. See appendix E for additional information concerning STAMIS.

b. All maintenance activities will establish historical records for maintenance significant medical equipment. Historical records are produced by the medical maintenance automation system.

c. The system-produced medical equipment historical records are the official records of the activity and will satisfy the requirements of AR 750-1.

CHAPTER 2

Maintenance and Repair Procedures

Section I. Maintenance Procedures

2-1. Authorized maintenance

a. Units authorized a 68A IAW their unit MTOE are authorized a maintenance capability. Exceptions are the Medical Logistics Management Centers (MLMC) and Medical Commands.

b. Maintenance operations consist of any action taken to retain or restore materiel to operational serviceability. The scope of maintenance tasks ranges from PMCS to wholesale maintenance.

(1) Defective/unserviceable medical equipment will only be repaired or serviced by school trained medical equipment repairers, MOS 68A. Specialized trade requirements for medical equipment, i.e. welding and refrigeration support will be performed under the direct supervision of a medical equipment maintainer.

(2) Medical equipment repairs will be completed IAW the manufacturer's literature, 10/20 standards, and Maintenance Allocation Chart (MAC). All equipment should be 100% fully mission capable (FMC) upon completion of repair services.

(a) Perform electrical safety testing after repairs or modifications have been made to the equipment's electrical or electronic circuitry.

(b) Verify calibration after replacement of any circuit boards or when repairs or adjustments have been made to the electronic circuitry.

2-2. Equipment management

a. Equipment management is a command responsibility. Each commander must provide for the maintenance of equipment issued to or under the responsibility of his or her unit to include the efficiency of programs established for this purpose.

b. The maintenance of medical equipment includes:

(1) Equipment operator PMCS, and medical equipment repairer PMCS, electrical safety inspections and tests, and CVC services.

(2) Remedial maintenance (unscheduled repairs).

(3) Overhaul and rebuild will be performed at MRMC Medical Maintenance Divisions or at associate maintenance activities designated by USAMMA.

2-3. Levels of maintenance

a. The levels of maintenance are defined in AR 750-1. Organizational leadership must continuously emphasize a comprehensive medical equipment maintenance program.

b. The keystone to any successful unit maintenance program is effective equipment operator maintenance. Operator level maintenance includes thoroughly checking the operation of the equipment and all accessories. A disciplined operator level maintenance program will ensure operators maintain familiarity with their equipment and that all equipment and accessories are available for use during times of deployment.

c. Unit level maintenance – The unit's medical maintenance activity (comprised of assigned medical equipment repairers (MOS 68A)) perform maintenance on their unit's medical equipment. Unit level maintenance includes cyclically scheduled maintenance and limited unscheduled/repair services. Extent of maintenance services, as well as limitations, for each type/item of equipment that should be performed by the maintenance activity is identified in the MAC.

d. Direct support level maintenance - Medical maintenance activities perform direct support maintenance on medical equipment in the possession of their supported activities. Supported activities include:

(1) Medical teams/units/elements (i.e. Forward Surgical Team, Eye Surgery Team, Pathology Medical Team, etc.) augmented to the organization;

(2) MTOE organizations authorized medical equipment located within their geographical area of responsibility.

e. Depot level maintenance. The refurbishment or restoration of medical equipment to like-new condition for return to the wholesale supply system.

2-4. Automated medical equipment maintenance management database

a. TOE medical maintenance activities will use the authorized medical maintenance management automation system. Standardization of automation is critical for instilling familiarity with equipment and maintenance management procedures, as well as providing visibility of medical equipment mission capability status throughout the chain of command to the national level.

b. Include all medical equipment authorized and on hand at the organization. Medical equipment and quantities authorized are identified in the MTOE either as distinct items by line item number (LIN) or as components of medical equipment sets or medical materiel sets (MES/MMS). MES/MMS (Unit Assemblage (UA)) Listings may be obtained from USAMMA.

c. Include all medical equipment requiring calibration services. Appendix H identifies types of equipment requiring calibration services. Calibration services should be scheduled and completed IAW the criteria listed in the manufacturer's literature or the equipment's -20 standards and MAC.

d. All equipment listed in the equipment master data file will be included in the automated maintenance management system. The maintenance manager has the responsibility of making the

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determination as to what additional items are included in the equipment database. Consider the following when determining inclusion into your database.

- (1) All electrical equipment.
 - (2) All equipment intended for use in critical patient care areas.
 - (3) All equipment that the manufacturer recommends, or has written procedures for the performance of routine periodic calibrations or verifications.
 - (4) Any equipment item you feel could pose a risk to a patient's safety or health. This would ensure maintenance tracking if an incident occurred.
 - (5) Any equipment item you deem should have a separate maintenance history.
- e. Establish cyclic (scheduled) maintenance service intervals consistent with the published TM, MAC, or manufacturer's literature. When determining the service intervals for medical equipment, utilize the most stringent.
- (1) PMCS – minimum annual;
 - (2) Safety – minimum annual;
 - (3) CVC – minimum annual.

2-5. Performance standards

a. The performance objective for scheduled service is to complete 100 percent of those services scheduled during each maintenance period. Minimum acceptable performance levels are:

- (1) PMCS - 95 percent.
- (2) CVC - 95 percent.
- (3) Electrical Safety - 95 percent.

b. Chapter 5 of this publication contains additional guidance concerning the performance of scheduled services.

2-6. Medical materiel complaints

a. Report medical equipment determined to be harmful or defective to the extent that use has caused or may cause serious injury, serious illness, and/or death as a medical materiel complaint IAW AR 40-61. Also report equipment that is unsatisfactory because of malfunction, design, defects (attributable to faulty materials, workmanship, and/or quality control), or performance. Submit a SF 380 to the Defense Supply Center Philadelphia (DSCP).

b. Medical maintenance will assist medical staff in the completion of appropriate actions to meet the requirements of the Safe Medical Devices Act (SMDA) of 1990 (See Appendix F).

2-7. Modification, alteration, and fabrication of medical equipment

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

b. Forward suggested medical equipment modifications directly to the USAMMA. Local commanders will not implement a suggested modification until the suggestion is reviewed and approved by the USAMMA.

c. Medical maintenance activities will not modify equipment that results in the equipment being altered to perform a function for which it is not designed or advertised by the original equipment manufacturer (OEM).

d. Medical activities will not fabricate, without prior approval, any item of medical equipment or component to be used on existing medical equipment. Forward requests for approval, based on unique one-time requirements, to the USAMMA.

Section II. Workload Control

2-8. Scheduling and deferring maintenance

a. The authorized automated system will produce a listing of monthly scheduled services work orders to be performed. Resources should be allocated as required to perform the scheduled maintenance services.

b. When available resources are inadequate to complete all required services, contact the regional manager (CONUS – USAMMA MMODs Hill, Toby, Tracy; Europe – USAMMCE; Korea – 16th MEDLOG) responsible for your geographic location. Adequate planning should allow you to forecast personnel shortages in advance to ensure arrangement of appropriate direct support assistance.

c. While deployed to an area of operation or theater of operation (AO/TO), the priority/focus changes from that of performing scheduled services to completing repair services and returning broken or non-mission capable equipment to a FMC status. Contact the MEDLOG battalion/company responsible for providing support within your AO/TO to request manpower augmentation or support.

d. To the maximum extent possible, service all critical or lifesaving equipment first. Typically, these items will also require calibration services.

e. As a last resort, deferment of maintenance may be required due to non-availability of manpower due to personnel shortages or other extenuating circumstances.

2-9. Equipment priorities - Priorities are based on:

- a. Equipment Readiness Code (ERC) Code. Refer to Appendix B.
- b. Commander's guidance.

Section III. Forms and Records Management

2-10. General

a. TOE medical maintenance activities will use the approved automated system or the manual system IAW DA PAM 750-8, TAMMS User Manual, and TB 38-750-2, Maintenance Management Procedures for Medical Equipment to manage their medical equipment maintenance. See appendix E for specific guidance on maintenance management reports required when an automated system is available.

b. AR 25-30, chapter 3, prohibits the creation of a form for a purpose for which a higher echelon form exists. Maintenance activities will use existing DA, DOD, and Food and Drug Administration (FDA) forms and labels.

2-11. Automated outputs

a. Maintenance managers will ensure that copies of the latest automated outputs/reports, applicable to equipment maintenance management, are available to maintenance personnel. See DA PAM 750-8 for guidance on available reports.

b. The DA Form 2406, Materiel Condition Status Report, or automated report equivalent will be forwarded to the Commander monthly. See appendix B, figure B-1 and figure B-2 for completion instructions and sample form.

c. Reconcile the work order register at least monthly. Physically account for all maintenance requests on the register and establish entries for those work orders on hand and not on the register.

2-12. Maintenance requests

When using manual procedures, DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 2407 (Maintenance Request) may be utilized to request maintenance services.

a. Complete a maintenance request for each scheduled and unscheduled work item performed.

b. Complete manual maintenance requests (DA Form 2404 or DA Form 2407) IAW DA PAM 750-8, TB 38-750-2, this bulletin, and local procedures when adequate automated maintenance procedures are not available. See figures 2-1 and 2-2 for sample DA Form 2404 and DA Form 2407.

c. See the ULLS-G user's manual when utilizing the ULLS-G.

d. Maintenance activities will keep a copy of all maintenance request forms for one year following the close date.

MAINTENANCE REQUEST For use of this form, see DA PAM 738-750 and 738-751; the proponent agency is DCSLOG				PAGE NO	NO OF PAGES	REQUIREMENT CONTROL SYMBOL CSGLD-1047(R1)					
SECTION I - CUSTOMER DATA				SECTION II - MAINTENANCE ACTIVITY DATA							
1a. UIC CUSTOMER W 0 3 H 4 5	1b. CUSTOMER UNIT NAME Dental Clinic 1	1c. PHONE NO x 7377	3a. WORK ORDER NUMBER (WON) 7 0 9 9 1 0 3 9 9	3b. SHOP Dental	3c. PHONE NO x 7361						
2a. SAMS-2 UIC/SAMS-I/TDA W 0 3 H 5 1	2b. UTILIZATION CODE ON	2c. MCSR	4a. UIC SUPPORT UNIT W 0 3 H 1 1	4b. SUPPORT UNIT NAME Medical Maintenance Branch							
SECTION III - EQUIPMENT DATA											
5. TYPE MNT REQ CODE TI	6. ID	7. NSN 6 5 2 0 - 1 1 7 1 - 3 4 4 3	15a. FAILURE DETECTED DURING/WHEN DISCOVERED CODE (Enter code) See DA Pamphlets 738-750 and 738-751		16. MILES/KILOMETERS/HOURS/ROUNDS M <input type="text"/> K <input type="text"/>						
8. MODEL 660	9. NOUN Ultrasonic Unit		15b. FIRST INDICATION OF TROUBLE/HOW RECOGNIZED CODE (Enter Code) See DA Pamphlets 738-750 and 738-751		H <input type="text"/> R <input type="text"/>						
10a. ORG WON/DOC NO	10b. EIC		17. PROJECT CODE (if assigned)	18. ACCOUNT PROCESSING CODE	19. IN WARRANTY? (enter Y or N)	20. ADMIN NO					
11. SERIAL NUMBER 6 1 4 3 2	12. QTY 1	13. PD	21. REIMBURSABLE CUSTOMER (if intransit customer enter Y or N)		23. SIGNATURE						
14. MALFUNCTION DESCRIPTION (for DSU, GSU/AVIM, DEPOT use)			22. LEVEL OF WORK								
24. DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BASIS OF COMPLETE CHECKOUT AND DIAGNOSTIC PROCEDURES IN EQUIPMENT TM (Do not prescribe repairs) No water from handpiece MEL - \$150.75											
25. REMARKS Supply condition code H											
26. TECHNICAL REFERENCES Estimated repair costs - \$162.00 \$102.00 (parts list) + \$60.00 (labor)											
SECTION IV - TASK REQUIREMENTS DATA											
27a. FILE INPUT ACT CD	27b. TASK NO	27c. ACT CODE	27d. TASK DESCRIPTION	27e. QTY TO BE RPR	27f. WORK CENTER	27g. FAILURE CODE	27h. MH PROJ	27i. MH EXP			
SAMPLE											
SECTION V - PART REQUIREMENTS											
28a. FILE INPUT ACT CD	28b. TASK NO	28c. ID NO	28d. NSN OR PART NUMBER	28e. SFX CD	28f. QTY RQD	28g. QTY ISSUED	28h. NMCS CD	28i. FAILURE CODE	28j. STORAGE LOCATION	28k. INITIALS	28l. COST \$
28m. TOTAL MANHOURS 0.5			28n. TOTAL MANHOURS COSTS \$ 100.00			28o. TOTAL PARTS COSTS \$ 0.00					
SECTION VI - COMPLETION DATA											
29. QTY RPR	30. QTY CONDEMN	31. QTY NRTS	32. EVAC WON	33. EVAC UNIT NAME John Doe CW2, USA C, Medical Maint. Branch							
SECTION VII - ACTION SIGNATURES											
34a. SUBMITTED BY	35a. ACCEPTED BY	35c. DATE	36a. WORK STARTED BY	37a. INSPECTED BY	38a. PICKED UP BY Branch						
34b. DATE	35b. STATUS	35d. TIME	36b. STATUS	36c. DATE	36d. TIME	37b. STATUS	37c. DATE	37d. TIME	38b. STATUS	38c. DATE	38d. TIME

DA FORM 2407, JUL 94

CONTROL COPY 3

Figure 2-2. Sample DA Form 2407 to request maintenance support.

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Section IV. Shop Safety

2-13. Shop safety procedures

Each maintenance activity will practice safe operating procedures, ensuring a safe environment for the repairer. Important points of shop safety are:

- a. Following general safety procedures as outlined by AR 385-10 and the activity safety program.
- b. Preventing electrical shock by noting and labeling hazards and following safe repair procedures.
- c. Following safe handling and disposal rules for items containing radioactive or toxic material. Safe handling and disposal rules are identified in the Material Safety Data Sheet (MSDS) received from the manufacturer with the hazardous material.
- d. Being knowledgeable of fire protection rules, plans, and evacuation routes.
- e. Ensuring compliance with the activities respiratory protection program while performing any task where the use or productions of toxic materials, fumes, or mists occur.
- f. Making available those items of occupational foot protection and protective clothing authorized by common table of allowance (CTA) 50-900.
- g. Following radiation health protection procedures as outlined by TB MED 521.
- h. Preventing eye and skin injuries by noting and labeling hazards and using protective devices. Optical sources such as arc lamps (mercury, xenon, etc.), lamps with quartz envelopes (since they can emit ultraviolet rays), infrared and germicidal lamps, welding arcs, and lasers can pose a hazard.
- i. Complying with microwave radiation procedures as outlined in TB MED 523.
- j. Complying with lockout/tagout procedures IAW OSHA Regulation 29 CFR, Part 1910, Control of Hazardous Energy Sources (Lockout/Tagout).

CHAPTER 3

Man-hour Accountability

3-1. General

- a. Supervisors are responsible to ensure manpower utilization is documented and accurate.
- b. Man-hour accounting provides a uniform system to identify and account for the utilization of duty hours for assigned medical repairers.

3-2. Use of direct labor worksheet

A direct labor worksheet and instructions for completing the worksheet are given in figures 3-1 and 3-2.

- a. Use the individual direct labor man-hours worksheet or an equivalent method to capture man-hours expended by assigned personnel.
- b. Maintenance managers will ensure that all direct labor personnel are familiar with and understand these instructions.

3-3. Individual direct labor man-hours worksheet preparation

The following instructions should be followed when preparing the individual direct labor man-hours worksheet.

- a. Assigned Hours – Eight hours per normal working day (Monday thru Friday); five days per week less holidays. Applies to 68A Medical Equipment Repairers assigned to the unit.
- b. Overtime Hours – Man-hours expended in excess of eight hours per day.
- c. Borrowed Hours – Man-hours borrowed from another unit i.e. support from a MEDLOG, IMSA, or USAMMA medical maintenance operations division.
- d. Loaned Hours – Man-hours loaned outside of the maintenance shop/activity. Examples include commander's driver; reenlistment, training, or NBC NCO; or some other permanent or semi-permanent duty or detail.
- e. Nonproductive – Unable to perform medical maintenance functions due to uncontrollable circumstances or restricted from performing medical equipment repairs and/or services by persons or conditions beyond your control.
- f. Productive Indirect Labor – Alert duty, maintenance meeting, maintenance shop or activity cleaning and policing.
- g. Duty Absence – Military training, organizational or installation duties, TDY – training, or personnel processing.
- h. Non-Duty Absence - See figure 3-2.
- i. Travel - See figure 3-2.
- j. MEDCASE – Non-applicable.
- k. Miscellaneous – All other documented direct labor man-hours expended but not otherwise mentioned.

INDIVIDUAL DIRECT LABOR MAN-HOURS WORKSHEET																																		
NAME: _____										Entered By: _____										DATE: _____														
REPORT MONTH: _____										WCC: _____										TECH-CD: _____														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Totals	
1	Assigned Hours																																	
2	Overtime Hours																																	
3	Borrowed Hours																																	
4	Loaned Hours																																	
5	Nonproductive Hours																																	
6	Productive - Indirect																																	
7	Duty Absence																																	
8	Non-Duty Absence																																	
9	Travel Time																																	
	Ancillary Services																																	
10	MEDCASE																																	
11	Miscellaneous																																	
12																																		
13																																		
14																																		
15																																		
16																																		

Figure 3-1. Individual direct labor man-hours worksheet.

INSTRUCTIONS FOR PREPARING THE INDIVIDUAL DIRECT LABOR MAN-HOURS WORKSHEET

- Line 1 **ASSIGNED HOURS** - 8 Hours per normal working day (Monday thru Friday)
5 days per week less holidays.
- Line 2 **OVERTIME HOURS** - Man-hours expended in excess of the normal 8 hours per day.
- Line 3 **BORROWED HOURS** - Hours borrowed from another work center or source.
- Line 4 **LOANED HOURS** - Man-hours loaned outside the basic work center to another work center, or loaned to indirect labor.
- Line 5 **Nonproductive:**
- | | |
|---------------------------------------|---------------|
| Lag - Awaiting Assistance | Lag - Weather |
| Lag - Awaiting Equipment, Tools, etc. | Lag - Parts |
| Lag - Awaiting Transportation | Lag - Break |
- Line 6 **Productive Indirect Labor:**
- | | |
|---|--|
| Alert Duty | Plant/Equipment Maintenance and Clean-up |
| Maintenance On-Installation Tech Training | Cleaning and Policing |
| Maintenance Meeting | |
- Line 7 **Duty Absence:**
- | | |
|---------------------------------------|----------------------|
| Military Training | TDY - Training |
| Organizational or Installation Duties | Personnel Processing |
- Line 8 **Non-Duty Absence:**
- | | |
|--------------------------|---|
| Compensatory Time Off | Medical Absence (Sick Call, Hospital, etc.) |
| Excused from Duty (Pass) | Personal Affairs |
| Leave - Official | AWOL, LWOP |
| Sick Leave - Civilian | Job Related Injury |
- Line 9 **Travel:** - Time expended traveling to and from maintenance jobs. Time traveling to, from, or between jobs which exceeds three-tenths (3/10) of an hour will be documented on this line. Travel which takes three-tenths of an hour or less will be charged to the job (work order). Time spent awaiting transportation will be charged to nonproductive labor (Line 5).
- Line 10 **MEDCASE** - Man-hours expended in support of MEDCASE Projects.
- Line 11 **MISCELLANEOUS** - All other documented direct labor man-hours expended but not otherwise mentioned.

Figure 3-2. Instructions for preparing the individual direct labor man-hours worksheet.

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CHAPTER 4

Repair Expenditures

Section I. Repair Eligibility and Evacuation

4-1. Cost elements

a. There are four elements of cost that must be identified to job orders. The elements for estimating the cost of repair are:

- (1) Direct labor;
- (2) Direct materiel;
- (3) Packaging and freight;
- (4) Miscellaneous.

b. Include all required repairs in the cost estimate to prevent expending essential resources maintaining uneconomically repairable equipment. Do not defer or omit repairs to reduce the total estimated cost.

c. Do not charge the following elements to an item of equipment as part of a repair, or when performing repair cost estimates:

- (1) The labor cost of applying manufacturer directed modifications to eliminate hazardous or unsuitable conditions.
- (2) Operating and user expense (operator replaceable) items; e.g., electrocardiograph paper; electrosurgical apparatuses electrodes; medical equipment filters; routine service items, etc.
- (3) Preventive and periodic services to include calibration or verification of medical equipment.
- (4) Man-hours expended in the technical inspection (TI) and condition coding of the medical equipment.
- (5) Equipment installation.
- (6) Replacement of components that are normally considered to be used-up during normal operation. These items include:
 - (a) X-ray tubes.
 - (b) Batteries, rechargeable or non-rechargeable (not from bench stock).
 - (c) Light bulbs (not from bench stock).
 - (d) Heat sealer heating elements (not from bench stock).
 - (e) Sieve beds and product tanks for oxygen concentrators.
- (7) Dental handpieces.
- (8) Bench stock.

d. For additional guidance identifying the elements of cost and estimating the cost of repair, see TB MED 7.

4-2. Responsibility of a Medical Equipment Repairer

a. A primary responsibility of the MER is inspection of materiel to determine repair eligibility.

(1) MERs are required to perform a TI to determine specific repair requirements before repairs are started.

(2) MERs are required to accomplish a mental condition coding before starting repairs.

b. The MER must include all cost elements when estimating the cost of repair, or when condition coding equipment.

c. Do not include the cost of the items listed in paragraph 4-1c this bulletin when determining repair eligibility.

d. An important aspect in determining economic reparability of equipment is the MER's individual judgment. In the absence of valid historical data, the MER will completely inspect the item and use his or her best judgment in making the reparability determination.

4-3. Repair eligibility

To assist in determining repair eligibility, use figure 4-1 to ensure that fundamental steps are not overlooked.

4-4. Historical information

Establish local procedures, either the authorized automated maintenance management system (STAMIS) or manual procedures (DA PAM 750-8) that ensures equipment historical records are available to the MER. Basic historical data required to determine repair eligibility are:

- a. Date put in service.
- b. Current unit price.
- c. Life expectancy.
- d. Maintenance expenditure limit.

4-5. Appearance of medical equipment

a. Medical equipment is an essential element of the healthcare delivery system. As such, it must operate effectively, and its appearance must reinforce and support the high military standards for patient care.

b. Consider equipment used in patient care or treatment areas for refurbishment if its appearance has deteriorated.

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c. Include the costs associated with refinishing an item of medical equipment when determining the repair cost estimate for the item.

4-6. Uneconomically reparable equipment

Do not repair unserviceable, uneconomically reparable equipment without a waiver IAW TB MED 7, and Section III of this chapter.

4-7. Evacuating equipment

a. Organizations evacuating equipment to support maintenance activities and/or MRMC's Maintenance Operations Divisions will ensure that adequate packaging and packing methods are applied to prevent loss or damage.

b. End items evacuated to support maintenance activities and/or MRMC's Maintenance Operations Divisions will include all major components and accessories required for the equipment to perform its designed functions (include operator and maintenance literature).

c. End items evacuated to support maintenance activities and/or MRMC's Maintenance Operations Divisions for repair and return will adhere to any special instructions required by the support element's external standard operating procedures.

d. The unit evacuating the equipment will establish procedures to ensure equipment accountability is maintained. The activity will ensure a signature is obtained from the shipper when evacuating equipment to another activity.

Section II. Maintenance Expenditure Limits

4-8. General

a. TB MED 7 contains guidance to determine Maintenance Expenditure Limits (MEL) for medical materiel.

b. Subsequent paragraphs in this publication explain equipment repair eligibility and the requirement for determining the MEL.

c. Maintenance is not authorized when the estimated repair cost of a repair would exceed the MEL, unless the servicing maintenance activity has obtained a waiver IAW TB MED 7 and this bulletin.

4-9. Computing maintenance expenditure limits

a. The MEL is based on a percentage of the current acquisition price and remaining life expectancy.

b. Use the MEL factor graph and the factor computation formula located in TB MED 7 to assist in determining whether unserviceable medical equipment is economically reparable.

c. Computations of MEL are based on the current acquisition price of an item of medical equipment. The current acquisition price may be obtained from the Army Master Data File (AMDF).

d. The percentage of current acquisition price for medical equipment ranges from 65 percent to 10 percent for those items not having an indefinite life. Determine the percent of useful life remaining for each item by applying the following formula. Years should be converted to months for simplicity.

$$\frac{\text{LIFE REMAINING IN MONTHS}}{\text{LIFE EXPECTANCY IN MONTHS}} = \text{PERCENT OF USEFUL LIFE REMAINING}$$

Or

$$\frac{60 \text{ MONTHS}}{120 \text{ MONTHS}} = .50 \text{ OR } 50\% \text{ USEFUL LIFE REMAINING}$$

e. Medical equipment that has reached or exceeded its life expectancy will have a maintenance expenditure limit of 10 percent of the current unit price. This will remain constant regardless of its age.

f. Do not include expenditures for the following when calculating the MEL:

- (1) Scheduled services;
- (2) Modifications;
- (3) TIS;
- (4) Warranty actions at no expense to the Government.

4-10. Indefinite life factors

a. Use a factor of 90 percent of current acquisition price, regardless of the item's age, when computing the MEL on the following items:

- (1) Dental and surgical hand pieces.
- (2) Fiber optic scopes (flexible and rigid).

b. Use a factor of 80 percent of current acquisition price when computing the MEL on the following items, regardless of the item's age:

- (1) Hospital furniture (nurses' desks, narcotics and/or medicine cabinets, stainless steel surgical stands, tables, and stools, etc.).
- (2) Basic electrical, mechanical, or electro-mechanical materiel (mechanical beds, over-bed tables, gooseneck lamps, etc.).

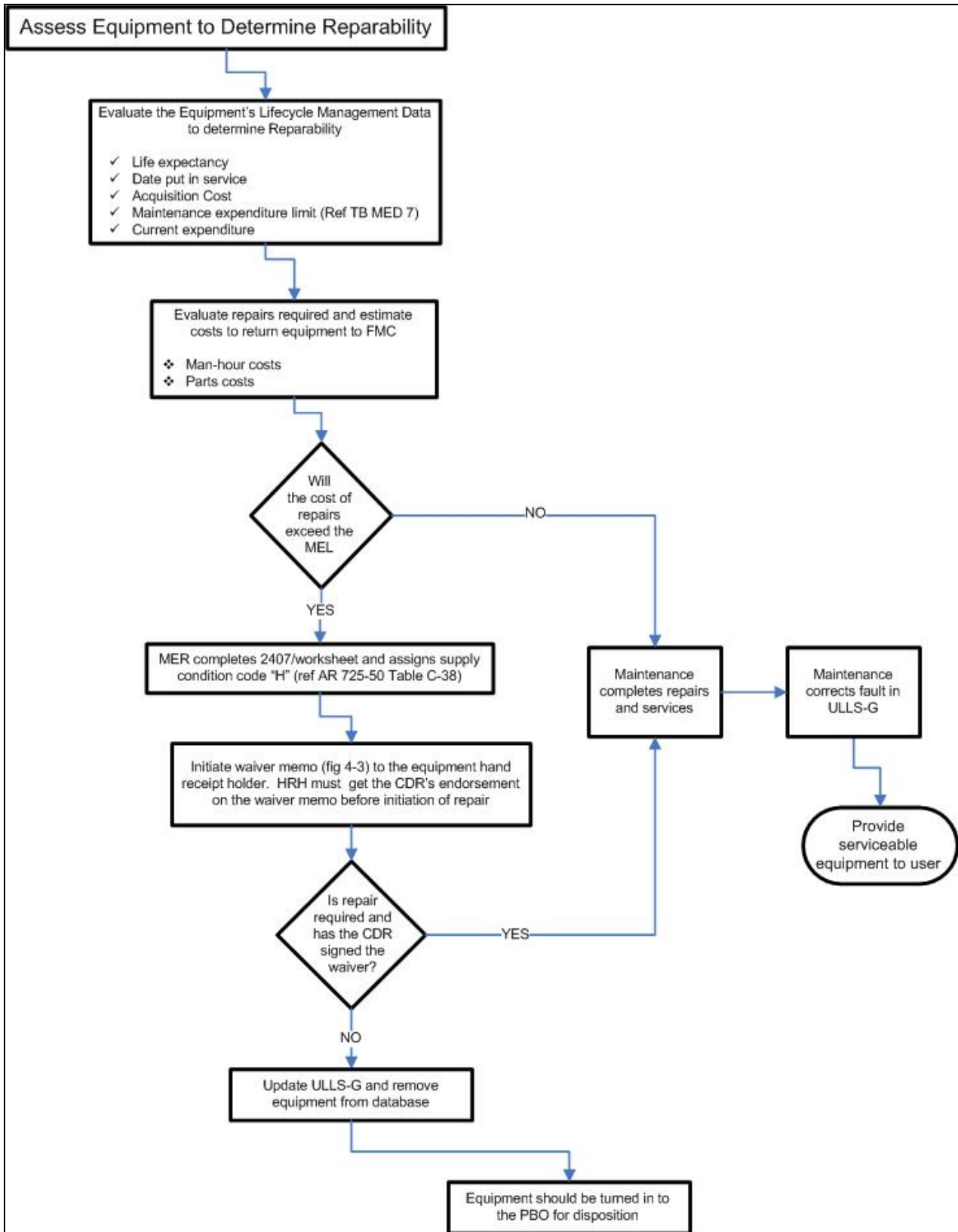


Figure 4-1. Decision matrix for condition coding medical equipment.

Section III. Waivers

4-11. Policies

a. The basic philosophy of the waiver policy is to ensure the best use of Government funds when equipment repair costs exceed normal repair limits, to provide controls to preclude the routine expenditure of resources for uneconomically repairable equipment, and to maintain command visibility of resource expenditures that are exception to established directives.

b. The unit commander may approve a waiver to exceed the MEL for TOE medical materiel when it is determined that:

(1) An urgent need for the medical equipment item exists to save life or limb or prevent distress, and that a replacement item will not be available to satisfy the professional requirement;

(2) The unit's readiness will be significantly impacted by the equipment shortage and a replacement item is not available.

c. Exceptions to standard waiver procedures for medical equipment must be approved by USAMMA. USAMMA may grant "blanket" and or one time repair waivers for designated equipment types, i.e. specific make and model X-ray apparatus or particular equipment items depending on circumstances.

Circumstances include:

(1) Specific equipment items that may no longer be in production with no replacement item identified;

(2) Equipment item is Other Procurement Army (OPA) funded for which the unit does not receive funding, thus the unit is unable to obtain a replacement;

(3) Immediate availability of a replacement item to support a National Emergency does not exist;

(4) Further guidance concerning USAMMA waivers may be obtained by contacting the USAMMA.

d. In an AO/TO, the designated MEDLOG operating in the capacity of the single integrated medical logistics manager (SMLIM) is the authority for approving deviations to these guidelines and limits.

4-12. Responsibility for requesting waivers

a. The Medical Maintenance section has the responsibility for condition coding medical equipment and notifying the user (ward, clinic, service, etc.) when the item is uneconomical to repair.

b. Responsibility for obtaining a waiver rests with the equipment user and/or hand receipt holder. They have knowledge of the clinical requirement and are in the best position to justify why the item should be repaired.

c. When maintenance has determined an item of equipment is uneconomical to repair, the following actions are required:

(1) The MER annotates the work accomplished section of the maintenance request by following the example at figure 4-2:

(a) Estimated parts cost to return the item to a serviceable condition.

(b) Estimated man-hours to complete the repair.

(c) Supply condition code of "H".

(2) The senior maintenance manager will:

(a) Verify and authenticate the condition code assigned by the MER by placing his or her signature on the maintenance request.

(b) Notify the user and/or hand receipt holder by initiating a memorandum (sample provided at figure 4-3).

(c) Attach a copy of the Maintenance Historical Record and applicable work request to the memorandum.

(d) Close the maintenance request regardless of the user's intent to acquire a waiver. Include repair costs incurred up to the point of making the determination that a waiver was required to complete the repairs.

(3) The user/hand receipt holder (ward, section, service, etc.) will:

(a) Consult and coordinate with the PBO and maintenance manager.

(b) Prepare an endorsement to the commander when a waiver is requested and provide the necessary justifications. If it is determined that repair is not desired, endorse the memorandum back to the maintenance branch indicating that disposal action is desired.

(4) The commander will endorse the memorandum back through the user (requester) to maintenance indicating approval or disapproval.

(5) Upon receipt of an approved waiver, the maintenance activity will initiate an unscheduled work order with action code WA.

(6) The PBO will arrange for proper disposal if a waiver has not been approved.

4-13. Waiver file

Establish and maintain a waiver file in the Medical Maintenance Branch.

a. The file will contain the original of the waivers authorizing the MEL to be exceeded.

b. Destroy the file copy of the waiver when the PBO disposes of the equipment item.

Section IV. Life Expectancy

4-14. Life expectancy of medical equipment

a. The life expectancy classifications for medical materiel are indefinite life, definite life, and exempt materiel. TB MED 7 defines these classifications.

MAINTENANCE REQUEST For use of this form, see DA PAM 738-750 and 738-751; the proponent agency is DCSLOG										PAGE NO		NO OF PAGES		REQUIREMENT CONTROL SYMBOL CSGLD-1047(R1)			
SECTION I - CUSTOMER DATA					SECTION II - MAINTENANCE ACTIVITY DATA												
1a. UIC CUSTOMER W03H45		1b. CUSTOMER UNIT NAME Dental Clinic 1		1c. PHONE NO x 7377		3a. WORK ORDER NUMBER (WON) 7099110399			3b. SHOP Dental		3c. PHONE NO x 7361						
2a. SAMS-2 UIC/SAMS-ITDA W03H51			2b. UTILIZATION CODE ON		2c. MCSR		4a. UIC SUPPORT UNIT W03H11			4b. SUPPORT UNIT NAME Medical Maintenance Branch							
SECTION III - EQUIPMENT DATA																	
5. TYPE MNT REQ CODE TI		6. ID		7. NSN 6520111713443			15a. FAILURE DETECTED DURING/WHEN DISCOVERED CODE (Enter code) See DA Pamphlets 738-750 and 738-751										
8. MODEL 660			9. NOUN Ultrasonic Unit			15b. FIRST INDICATION OF TROUBLE/HOW RECOGNIZED CODE (Enter Code) See DA Pamphlets 738-750 and 738-751			16. MILES/KILOMETERS/HOURS/ROUNDS M <input type="text"/> K <input type="text"/>								
10a. ORG WON/DOC NO				10b. EIC		H <input type="text"/> R <input type="text"/>											
11. SERIAL NUMBER 61432			12. QTY 1		13. PD		17. PROJECT CODE (if assigned)		18. ACCOUNT PROCESSING CODE		19. IN WARRANTY (enter Y or N)	20. ADMIN NO					
14. MALFUNCTION DESCRIPTION (for DSU, GSU/AVIM, DEPOT use)						21. REIMBURSABLE CUSTOMER (if intransit customer enter Y or N)			22. LEVEL OF WORK			23. SIGNATURE					
24. DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BASIS OF COMPLETE CHECKOUT AND DIAGNOSTIC PROCEDURES IN EQUIPMENT TM (Do not prescribe repairs) No water from handpiece MEL - \$150.75																	
25. REMARKS Supply condition code H																	
26. TECHNICAL REFERENCES Estimated repair costs - \$162.00 \$102.00 (parts list) + \$60.00 (labor)																	
SECTION IV - TASK REQUIREMENTS DATA																	
27a. FILE INPUT ACT CD	27b. TASK NO	27c. ACT CODE	27d. TASK DESCRIPTION				27e. QTY TO BE RPR	27f. WORK CENTER	27g. FAILURE CODE	27h. MH PROJ	27i. MH EXP						
SAMPLE																	
SECTION V - PART REQUIREMENTS																	
28a. FILE INPUT ACT CD	28b. TASK NO	28c. ID NO	28d. NSN OR PART NUMBER			28e. SFX CD	28f. QTY RQD	28g. QTY ISSUED	28h. NMCS CD	28i. FAILURE CODE	28j. STORAGE LOCATION	28k. INITIALS	28l. COST \$				
28m. TOTAL MANHOURS 0.5			28n. TOTAL MANHOURS COSTS \$ 100.00			28o. TOTAL PARTS COSTS \$ 0.00											
SECTION VI - COMPLETION DATA																	
29. QTY RPR		30. QTY CONDEMN		31. QTY NRTS		32. EVAC WON		33. EVAC UNIT NAME John Doe CW2, USA C, Medical Maint. Branch									
SECTION VII - ACTION SIGNATURES																	
34a. SUBMITTED BY		35a. ACCEPTED BY		35c. DATE		36a. WORK STARTED BY		37a. INSPECTED BY		38a. PICKED UP BY Branch							
34b. DATE	35b. STATUS	35d. TIME	36b. STATUS	36c. DATE	36d. TIME	37b. STATUS	37c. DATE	37d. TIME	38b. STATUS	38c. DATE	38d. TIME						

Figure 4-2. Sample maintenance request depicting equipment coded H.

	S:
OFFICE SYMBOL	DATE:
MEMORANDUM FOR (APPLICABLE HR HOLDER)	
SUBJECT: Uneconomically repairable equipment, Nomenclature, ADMIN Number	
1. Equipment identified on the attached maintenance request (End 1), and maintenance record (End 2) is not economically repairable and should be disposed of for the reason indicated below:	
<input type="checkbox"/> Repair will exceed the maintenance expenditure limit (MEL). MEL = \$ _____ Estimated cost of repair = \$ _____	
<input type="checkbox"/> Equipment is declared professionally undesirable.	
<input type="checkbox"/> Equipment is considered hazardous for use on human patients.	
2. If it is determined that this item is critical, with no replacement capability available, and must be repaired, endorse this memorandum to the (Commander/DOL/C,Log), providing justification as to why the item should be repaired.	
3. The commander, or the commander's designated representative (DOL) if designated in writing, must authorize the expenditure of resources to maintain uneconomically repairable equipment.	
2 Encls	SIGNATURE BLOCK OF THE SENIOR MAINTENANCE MANAGER

Figure 4-3. Uneconomically repairable equipment disposition memo.

b. TB MED 7, appendix B, lists life expectancies for medical equipment with a definite life. The predetermined life expectancy in years is based on an average normal usage.

c. The life expectancy for medical equipment begins on the date the item is placed in service at the unit. All medical equipment is considered in service when the item is ready for use in the care and treatment of patients.

CHAPTER 5

Scheduled Services

Section I. General

5-1. Policy

a. In garrison, the performance of scheduled preventive maintenance services on medical equipment will take priority over routine repairs.

b. When deployed in an AO/TO (combat operations), repair of non-mission capable lifesaving equipment will take priority.

(1) Scheduled preventive maintenance services will be completed as the mission and time permits.

(2) Assistance should be requested from the supporting MEDLOG activity when maintenance requirements exceed manpower capability.

c. Scheduled services for medical equipment include preventive maintenance (PM), electrical safety (ST), and calibration/verification/certification (CVC).

5-2. Performance standards

The performance objective for scheduled preventive maintenance service is to complete 100 percent of those services scheduled during each maintenance period. Minimum acceptable performance levels are:

a. PMCS - 95 percent.

b. CVC - 95 percent.

c. Electrical safety - 95 percent.

5-3. Automated medical maintenance documentation

a. The authorized STAMIS must be accessed in order to automatically generate requirements for the performance of scheduled services.

(1) Schedules for services are contingent on the base date and maintenance interval the maintenance activity keys into the database.

(2) A Monthly Scheduled Services Work Order Listing is generated during the monthly performance report cycle (usually the 15th) of the month prior to the scheduled month.

(3) Record the completion of scheduled services using the generated monthly scheduled work order (listing).

(4) Maintenance managers should adhere to the generated schedule for performing scheduled services.

b. Maintenance managers must ensure that scheduled services are completed in a timely manner and entered into the automated database.

(1) Minimal repair requirements (approximately 15 minutes) discovered during scheduled services deemed necessary to ensure the equipment is 100% FMC will be completed as part of the scheduled service.

(2) The scheduled service work order listing completed by the MER and signed by the hand receipt holder of the activity serviced will be maintained on file until superseded.

c. Provide a copy of the Monthly Scheduled Service Work Order Listing to the hand receipt holders to ensure they have their equipment readily available when the maintenance personnel arrive.

(1) Give the hand receipt holder a copy of the completed Monthly Scheduled Work Order Listing. These listings document the completion of scheduled services or the maintenance managers written explanations for nonperformance. The hand receipt holder should retain their copy for 1 year or until provided with an update by Medical Maintenance Branch.

(2) The hand receipt holder will sign the maintenance copy acknowledging the MER's performance of the scheduled services. This acknowledges equipment not located or equipment requiring repairs.

Section II. Preventive Maintenance Checks and Services**5-4. Frequency**

Initially inspect all medical equipment prior to use (pre-issue inspection/TI). Medical equipment should then receive a PMCS at a minimum semiannually. In the event the manufacturer's literature specifies a more stringent maintenance criterion, use the more stringent criterion.

5-5. Equipment operator preventive maintenance checks and services

a. An effective operator maintenance program is critical to a successful unit level maintenance program.

b. Equipment operators must be trained and proficient on all equipment for which they are responsible. Operators must be:

(1) Capable of performing before, during, and after operation PMCS requirements;

(2) Familiar with all accessories and expendables used during the operation of the equipment.

Defective accessories should be identified during operator maintenance services.

c. The unit training program should include an operator level training requirement to ensure operators are proficient in the operator check out procedures and operation of the equipment. Local procedures will determine who provides this training.

5-6. Repairer preventive maintenance checks and services

a. Medical equipment repairers will perform equipment services in accordance with the manufacturer's literature, USAMMA published technical manuals and maintenance allocation charts, and the guidelines of appendix K this publication.

b. Maintenance services should be performed with the components and accessories designated to the item being serviced.

Section III. Calibration/Verification/Certification

5-7. General

a. CVC services are defined as the comparison of a medical system or medical device of unverified accuracy to a measurement system or device of known accuracy to detect, and correct if necessary, any deviations from required performance specifications of the medical system or medical device. This comparison may be accomplished using one or more of the following measuring systems:

(1) An instrument or device, the accuracy of which is directly traceable back to the National Institute of Standards and Technology (NIST). This would include all authorized TMDE with a valid calibration.

(a) All TMDE used to calibrate or service medical equipment will have a DA Label 80 or manufacturer's label certifying the last time the TMDE calibration was certified and when it is due again.

(b) TMDE which has exceeded its calibration interval or for which a calibration interval cannot be verified will not be used to calibrate medical equipment.

(2) A natural physical constant such as the oxygen content of air at normal pressure and temperature.

(3) Other material with known performance characteristics. An example is oxygen of 100 percent purity.

b. The CVC services on medical equipment will be IAW Federal requirements, manufacturer's recommendations, and other applicable guidance. At a minimum, maintenance activities will include the medical equipment listed at appendix H for CVC services.

c. Review the manufacturer's literature for the requirement to perform CVC services. When so indicated, annotate the applicable STAMIS record and schedule the item for service.

d. The CVC services, except those services restricted to designated general support (GS) units, will normally be performed as unit maintenance.

e. Affix a DD Form 2163 (Medical Equipment Verification/Certification) to the calibrated equipment upon completion of CVC services. TB 38-750-2 contains instructions for the use and completion of DD Form 2163.

f. Schedule CVC services IAW the MAC or manufacturer's recommendation. The minimum interval for calibration schedules is annually.

5-8. Defibrillators

a. Evaluate and performance test defibrillators semiannually using a defibrillator analyzer.

b. Use DA Form 5624-R (DC Defibrillator Inspection Record) located in TB 38-750-2 to record the results of the evaluations. Maintain the completed form on file for 6 months pending the next CVC service or until superseded.

c. Affix a DA Label 175 (Defibrillator Energy Output Certification) to the defibrillator upon completion of the CVC. A DD Form 2163 is not required.

5-9. X-ray equipment

Chapter 6 of this bulletin describes the calibration requirements for diagnostic x-ray systems.

Section IV. Electrical Safety

5-10. General

a. Make a continued effort to provide an electrically safe environment within the medical unit.

b. Establish an electrical safety program in accordance with AR 40-61 and this bulletin.

(1) After the initial testing, test medical equipment intended or likely to come into contact with a patient semiannually. Test all other medical equipment annually.

(2) The STAMIS entries documenting the completion of an electrical safety test are sufficient documentation for equipment that passes safety testing.

(3) Do not use commercially procured labels, stickers, or forms to document or record the performance of safety tests. Use only those forms listed in TB 38-750-2.

c. When any item or system is fails an electrical safety test, the following actions are required:

(1) Complete a medical equipment electrical safety sheet (DA Form 5621-R or DA Form 5622-R) as appropriate. See TB 38-750-2 for form use.

(2) Affix a DD Form 1577 (Unserviceable (Condemned) TAG - Materiel) to the equipment noting the safety defect. Do not remove the tag until the defect has been corrected.

(3) Notify the user/hand receipt holder of the potential hazard.

(4) Initiate a repair maintenance request to correct the defect. Upon completion of the repair, attach a copy of the completed maintenance request to the appropriate DA Form (see paragraph 5-10c(1) above). Maintain these forms in the maintenance section for 1 year.

(5) When the safety defect has been corrected, initiate an unscheduled safety work order to document the passing of the safety test on the item's maintenance record.

CHAPTER 6

Management and Control of Diagnostic X-Ray

6-1. Calibration/verification/certification requirements

- a. Calibrate x-ray systems at the frequency specified by the manufacturer. Use a frequency of annual if the manufacturer does not specify an interval.
- b. X-ray systems will be calibrated/verified IAW the manufacturer's specifications.
- c. Only MERs will accomplish x-ray equipment calibrations. They will be knowledgeable of the specific requirements of the Radiation Control for Health and Safety Act.
- d. Invasive or noninvasive type TMDE may be used to perform x-ray CVC.

6-2. Calibration/verification/certification records requirements for diagnostic x-ray systems

- a. Use DD Form 2164 (X-Ray Verification/Certification Worksheet) to record the results of CVC for all x-ray equipment, including computer tomography (CT).
- b. Complete DD Form 2164 IAW TB 38-750-2 and the following:
 - (1) A separate sheet of paper will be attached to the DD Form 2164 to indicate the manufacturer, model, serial number, and date of calibration expiration of all items of TMDE used to perform the CVC.
 - (2) Maintain the completed DD Form 2164 in the RPPF for 1 year pending completion of the next x-ray calibration.
- c. When performed by a contractor, file the contractor's calibration worksheet (which specifies actual services performed) and associated service report in the x-ray RPPF for 1 year pending completion of the next x-ray calibration.
- d. Individuals performing the CVC service, whether contractor or DA personnel, will complete the DD Form 2163 and display it prominently on the system.

TB MED 750-2

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CHAPTER 7

Technical Inspection For Issue

Section I. General

7-1. Purpose

This chapter provides guidance required for compliance with AR 40-61, AR 750-1, AR 725-50, TB MED 7, and discusses performing technical inspections (TIs) for issue.

7-2. Objectives

The overall objectives of condition coding are to ensure that units receive equipment that is either serviceable or repairable.

7-3. Implementation

Maintenance managers will take immediate action to implement the contents of this chapter into shop procedures. All MERs perform TIs and classification of medical equipment; therefore, the requirement exists that each MER have a thorough understanding of this directive.

Section II. Technical Inspections

7-4. General

Medical equipment must be fully mission capable (FMC), with all necessary components and accessories prior to being issued to the patient care provider/hand receipt holder.

7-5. Pre-issue technical inspection

- a. Only MERs (68A & 670A) will perform a TI on medical equipment.
- b. Perform a pre-issue inspection (TIs) of all medical equipment before acceptance and issue into the healthcare delivery system per the requirements of AR 40-61. Figure 7-1, this bulletin, provides a flow chart for accomplishing the inspection.
- c. MERs will perform a TI of all new medical equipment to ensure the equipment is operational and safe prior to patient use.
- d. Perform a TI on medical equipment, either new or returned from depot/commercial activities, before being issued to the using activity.
- e. Inspect equipment for:
 - (1) Appearance (external damage).
 - (2) Completeness (accessories, manufacturer's literature, etc.)
 - (3) Internal condition (damage, leaks, broken parts, etc.).
 - (4) Proper performance.
 - (5) Compliance with provisions of the contract under which the item was requested.
- f. Consider having the hand receipt holder pick up new equipment directly from the medical maintenance activity. The PBO must have completed all receipt procedures and ensured accountability before pick up.

7-6. Inspection standards

- a. Medical equipment must meet the equipment manufacturer's serviceability and performance standards to be suitable for patient care and use. The manufacturer's literature and published technical manuals will be used by the medical equipment repairer when performing a TI for condition coding/repair eligibility.
- b. Annotate the inspection on one of the following forms when performing a TI:
 - (1) DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
 - (2) DA Form 2407 (Maintenance Request) or automated sheet.

7-7. Categories of inspection

- a. Appendix K contains a generic checklist for each category. These checklists are intended to be a guide and may vary depending on type and manufacturer of the equipment as determined by the TI.
- b. Use the appropriate category of inspection when performing a TI of medical equipment.
 - (1) Category A - All items.
 - (2) Category B - Hydraulic/mechanical.
 - (3) Category C - Positive/negative pressure.
 - (4) Category D - Heating/cooling/mixing.
 - (5) Category E - Electrical/electronic.
 - (6) Category F - Electric motors.
- c. More than one category may be used during the TI of an item or system.

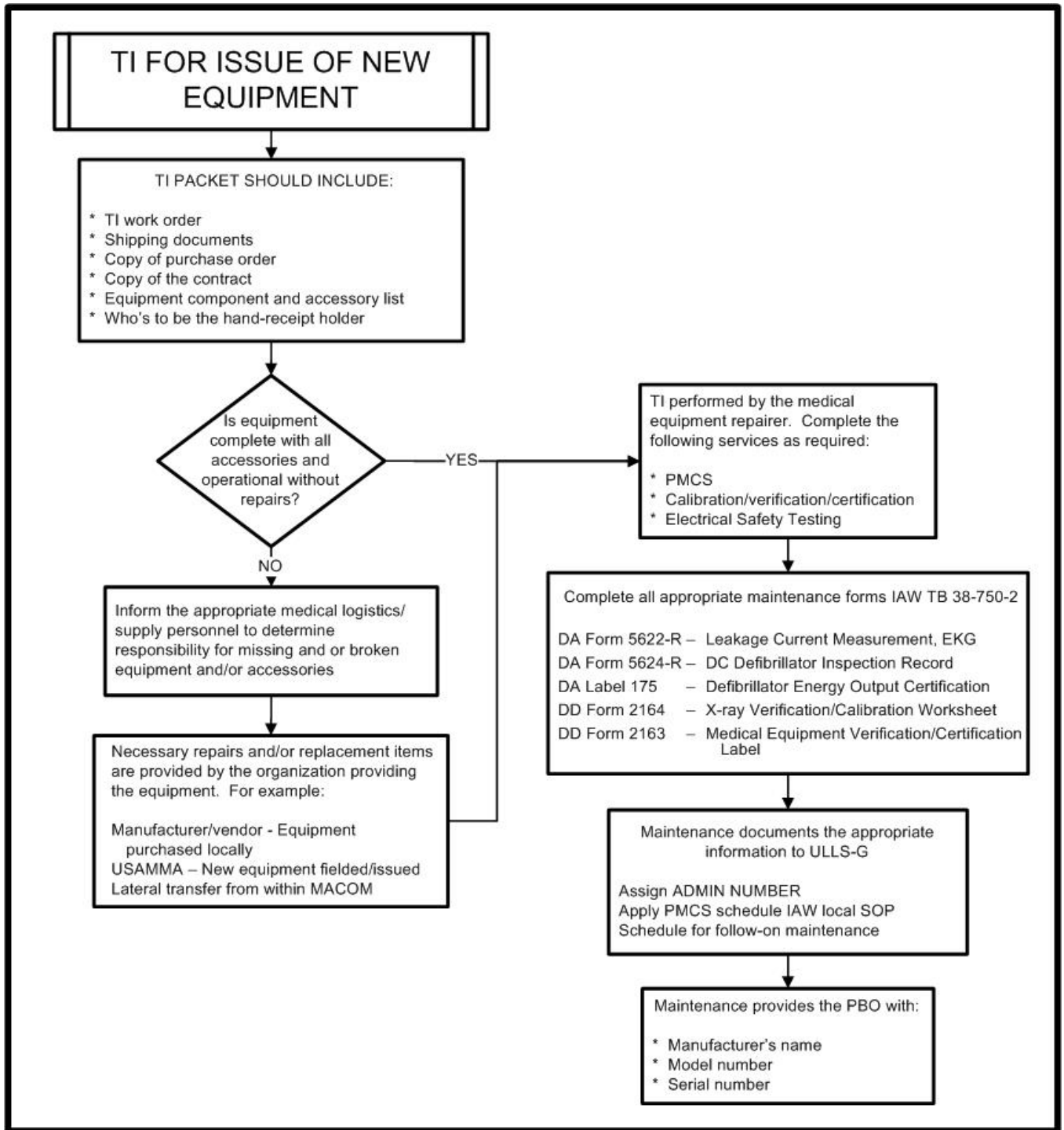


Figure 7-1. New equipment issue flow chart.

CHAPTER 8

Technical Inspection for Turn-In or Transfer

Section I. General

8-1. Purpose

This chapter provides guidance required for compliance with AR 750-1, AR 725-50, and TB MED 7, and discusses:

- a. Performing Technical Inspection (TI) for turn-in or transfer;
- b. Using proper condition coding procedures; and
- c. Disposing of hazardous excess medical equipment.

8-2. Objectives

The overall objectives of condition coding are to:

- a. Preserve the integrity of the lateral transfer redistribution system and ensure that units receive equipment as originally coded;
- b. Ensure serviceability or reparability of an item removed from service by one user for re-entry into the supply system;
- c. Prevent the wasteful movement of unserviceable medical equipment;
- d. Standardize coding procedures; and
- e. Ensure proper coding of equipment sent to the DRMO or the USAMRMC cannibalization point.

8-3. Implementation

Maintenance managers will take immediate action to implement the contents of this chapter into shop procedures. All MERs perform TIs and classification of medical equipment; therefore, the requirement exists that each MER have a thorough understanding of this directive.

Section II. Technical Inspections

8-4. General

Standardized coding procedures must be followed to ensure condition coding of medical equipment is accurately annotated and only quality equipment is retained for medical use and patient care.

- a. Only technically qualified MERs (68A or 670A) will perform a TI on medical equipment.
- b. The TI is used to:
 - (1) Determine the extent of maintenance effort and resources required to make the item fully mission capable.
 - (2) Classify the item as either economically or uneconomically repairable.
 - (3) Prevent the loss of equipment solely on the basis of age.
- c. All excess medical equipment, regardless of turn-in destination, requires a TI prior to disposition. Figure 8-1 provides a flow chart for conducting TIs of excess equipment.

8-5. Technical inspection procedures

- a. Ensure the equipment operator/user has decontaminated the equipment, i.e., removed of all chemicals and potentially infectious substances.
- b. Visually inspect and operationally test equipment needing repair or overhaul to the extent possible as part of the inspection evaluation.
- c. Make the greatest use of diagnostic techniques and available test equipment to isolate defective parts. Do not unreasonably disassemble equipment just to check serviceability of parts, components, or assemblies.
- d. Inspect equipment for:
 - (1) Appearance (external damage).
 - (2) Completeness
 - (3) Internal condition (damage, leaks, broken parts, etc.).
 - (4) Proper performance.

Section III. Serviceability Inspection Checklist

8-6. Inspection standards

a. Medical equipment must meet the equipment manufacturer's serviceability and performance standards to be suitable for patient care and use. The manufacturer's literature and published technical manuals will be used by the medical equipment repairer when performing a TI for condition coding/repair eligibility.

b. Annotate the inspection on one of the following manual forms or the ULLS-G automated form when performing a TI:

- (1) DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
- (2) DA Form 2407 (Maintenance Request) or automated sheet.

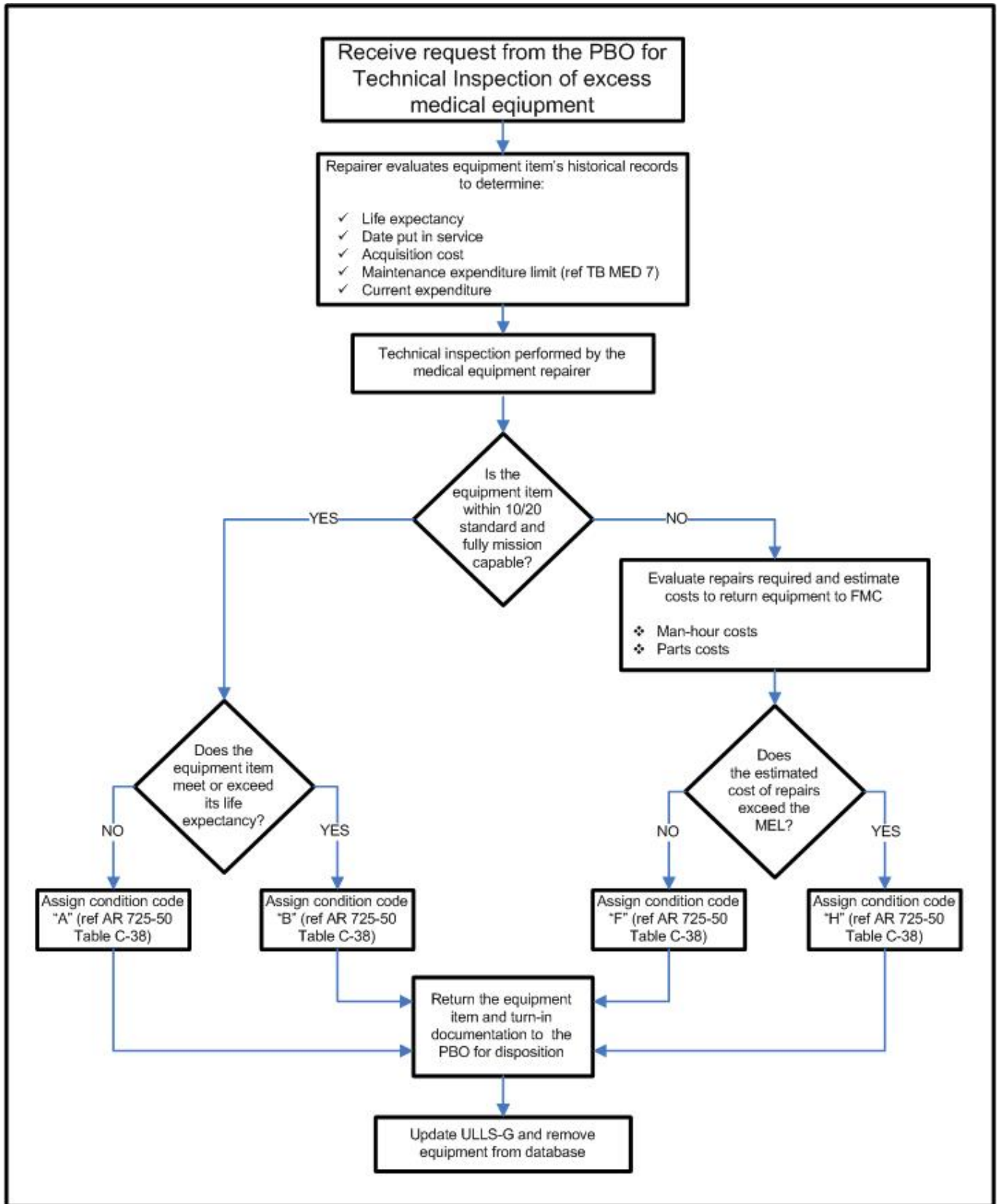


Figure 8-1. Equipment turn-in flow chart.

8-7. Categories of inspection

- a. Use the appropriate inspection criteria, IAW Appendix K, based on the different categories of equipment that apply when performing a TI of medical equipment.
 - (1) Category A - All items.
 - (2) Category B - Hydraulic/mechanical.
 - (3) Category C - Positive/negative pressure.
 - (4) Category D - Heating/cooling/mixing.
 - (5) Category E - Electrical/electronic.
 - (6) Category F - Electric motors.
- b. The checklist identified in Appendix K is generic for each category and may vary depending on manufacturer and type of the equipment.
- c. One or more of the categories may be applicable to an item or system.

Section IV. Condition Coding Medical Equipment**8-8. Supply condition code**

- a. Supply condition codes are one position, composed of an alphabetic character, and used to classify materiel. They identify the degree of serviceability, condition, and completeness in terms of readiness for issue and use, or to identify actions underway to change the status of materiel.
- b. Medical maintenance activities are responsible for assigning the supply condition code.
- c. Use the following supply condition codes when assigning condition codes to medical equipment:
 - (1) A - Serviceable medical equipment with life remaining in excess of 6 months.
 - (2) B - Serviceable medical equipment with less than 6 months life expectancy remaining, or has reached or exceeded its life expectancy.
 - (3) F - Unserviceable, economically repairable medical equipment.
 - (4) H - Unserviceable, uneconomically repairable medical equipment that does not meet the criteria to justify repair; i.e., exceeding the MEL. Equipment for which repair parts are no longer available qualifies for assignment of this condition code (check with USAMMA's cannibalization point, Hill AFB, to determine if parts may be available).

8-9. Condition coding requirements

- a. The organization's MTOE authorization quantity changes, making equipment excess.
- b. During a new equipment fielding, when medical equipment items are replaced or modernized.

8-10. Responsibility for requesting condition coding

- a. The PBO is responsible for submitting maintenance requests to the medical maintenance activity when it becomes necessary to condition code excess medical equipment.
- b. If the unit receives disposition that directs the equipment be disposed of through the DRMO, the request will state, "Request TI for Disposal to DRMO". Recoding is not required if the item was originally condition coded within 120 days from the date of the item is being disposed of through DRMO.

8-11. Accuracy and assignment of proper condition codes

- a. Condition coding must be accurate to ensure proper disposition of equipment. Improper coding may result in disposal of economically repairable equipment or incur unnecessary costs for transportation, storage, and handling of items that should have been disposed of through DRMO.
- b. The assignment of a true and factual supply condition code for items turned in to DRMO will ensure the highest net return to the Government for items sold.
- c. To assist in preventing the assignment of the wrong condition code, refer to the MEL factor graph and factor computation located in TB MED 7. Chapter 4, section II, of this TB further discusses maintenance expenditure limits.
- d. The senior maintenance manager assigned to the medical unit will review, verify, and authenticate all condition codes being assigned by placing his or her signature on the maintenance request.

8-12. Recoding of medical materiel

- a. Recode equipment when the assigned condition code is older than 120 days, regardless of the equipment's destination.
- b. Recode equipment when the equipment is not available for shipment in the condition originally reported.

8-13. X-ray equipment disposal

X-ray equipment will be disposed of as directed by USAMMA guidance.

- a. Contact the USAMMA MMOD responsible for regional support to your location.
- b. The MMOD Tracy, CA, 209-839-4556, is USAMMA's Center of Excellence (COE) for medical imaging equipment.

TB MED 750-2

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CHAPTER 9

Repair Parts, Tool Control, and Test, Measurement, and Diagnostic Equipment (TMDE)

Section I. Repair Parts Management

9-1. Medical equipment parts requisitions

- a. Medical maintenance activities (MMA) will requisition repair parts through their unit medical supply section. Requests for repair parts will be in accordance with the unit's standard operating procedures for manual or automated processes.
- b. MMAs will maintain a document register; automated when available or manual (DA Form 2064) for all repair parts requisitions. A document register is used to:
 - (1) Assist in accurately tracking the status of requisitions;
 - (2) Anticipate annual budget requirements for repair parts.
- c. The document register will be maintained IAW DA PAM 710-2-1.

9-2. Medical repair parts inventory management

- a. Commanders may authorize a limited stock of expendable repair parts and supplies to ensure speedy accomplishment of the medical maintenance mission.
 - (1) Units that are authorized medical equipment repairers, tools, and test equipment to perform maintenance normally maintain a nominal inventory of parts (Prescribed Load List (PLL)).
 - (2) Units that regularly support other units without maintenance capabilities will include the supported unit's equipment in their parts PLL stockage computations.
- b. Manage all repair parts IAW the guidance provided in this bulletin AR 40-61, AR 710-2, DA Pam 710-2-1, this bulletin, and local procedures.
- c. Medical maintenance activities are authorized four types of maintenance related supplies:
 - (1) Demand supported (DS);
 - (2) Bench stock (BS);
 - (3) Mission essential (ME);
 - (4) Minimum order (MO).
- d. Annotate repair parts used in the course of completing a repair on the associated work order.
- e. Annotate repair parts used when performing scheduled services (e.g., filters) on DA Form 2404 or automated maintenance capability. These parts are not bench stock and are usually unique to an end item of medical equipment.

9-3. Demand supported

- a. Selection of items for stockage is based on three demands within a control period (CP). Control periods are 180 days for Active Army and 360 days for ARNG and the USAR.
- b. At least one demand must have occurred within subsequent control periods to retain a repair part on stock after initial stockage.
- c. When sufficient demands accrue to qualify a part for stockage, calculate the requisitioning objective (RO) and reorder point (ROP) using procedures identified in DA Pam 710-2-1.
- d. Inventories and records of the medical PLL parts must be reviewed every 180 days (USAR and ARNG: 360 days).
 - (1) The review includes an inventory of the PLL parts on hand.
 - (2) Perform the review and inventory as follows:
 - (a) Compare the storage location of each item with the location listed and correct any differences.
 - (b) Count all items listed and change the balance on hand if necessary.
- e. The MTF commander or his or her designee approves and signs the shop stock inventory and authorization listing annually. Maintain the approved listing in the maintenance shop until superseded. The approved listing is the authorization for stockage of repair parts.

9-4. Bench stock

- a. Bench stock is low cost, high use items used by maintenance personnel at an irregular rate.
 - (1) Bench stock includes items such as common hardware (nuts, bolts, washers), wire, tubing, hose, rope, webbing, thread, sandpaper, gasket material, sheet metal, seals, oil, grease, and repair kits.
 - (2) Class VIII repair parts kits are considered bench stock when they are purchased using one ordering catalog number and purchased as an advertised kit. An accumulation of repair parts developed by the maintenance activity is not considered a repair kit.
 - (3) Bench stock does not include repair parts unique to an end item of equipment, with the exception of those parts that may be in a repair parts kit.
- b. Bench stock will not exceed a 30-day supply. Stock those items issued in standard packs that exceed a 30-day supply and reduce through attrition.
- c. Manage and account for bench stock in accordance with DA PAM 710-2-1 and the authorized STAMIS.
- d. Account for bench stock parts on individual work requests to provide an audit trail.
 - (1) Identify bench stock parts, used in the completion of a work order, as bench stock on the work order (except common hardware and bulk materiel like nuts, bolts, etc.).
 - (2) Annotate the parts cost column of the work order with N/C to indicate No Charge. No costs entry is required on the authorized STAMIS or manual maintenance record for bench stock.

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e. The maintenance officer reviews, approves, and signs the authorized STAMIS automated bench stock listing semiannually. This becomes the medical maintenance activity's authorization to maintain bench stock items.

9-5. Mission essential repair parts

a. Mission essential repair parts (MERP) are repair parts unique to an equipment item, essential to the medical maintenance mission, and do not qualify for shop stock. The MERP are required to:

- (1) Ensure the functioning of life saving equipment.
- (2) Support equipment for which the manufacturer will no longer supply parts.
- (3) Support new equipment until demand data can be established.

b. Parts requiring periodic replacement during the performance of scheduled services qualify as MERP. These parts are usually identified in the -20 manual, MAC, and manufacturer's literature as requiring replacement on a time or usage schedule.

c. Maintenance managers are responsible for using discretion in the selection of those items deemed mission essential. Although many parts may be purchased locally and available within a short time span while in garrison, consideration should be given to the availability of these items on the battlefield.

d. Keep quantities of individual MERPs to a minimum, normally enough to support 10 percent of a medical equipment items in the supported inventory. Enter this minimum quantity as the operating level into the appropriate STAMIS or manual procedures.

e. Review and inventory MERPs every 180 days. Document the completion of inventories using the appropriate STAMIS or manual procedures.

f. The commander, or his or her designee, approves and signs the appropriate STAMIS automated MERPs listing annually. Maintain the approved listing in the maintenance shop until superseded.

9-6. Minimum order (MO)

a. MO quantities are those which are in excess of the stockage objective or are not demand supported.

b. Repair parts issued in unit pack quantities, or purchased as a result of MO requirement, are authorized to be retained in shop stock and reduced through attrition.

c. Indicate the MO and the minimum dollar order required from the vendor (e.g., MO \$100.00) on the expendable repair parts master record.

d. Document MO repair parts that do not qualify for DS, ME, or BS by using a repair parts management code of MO.

9-7. Operator replacement items

a. It is the responsibility of the equipment operator/hand receipt holder (wards, clinics, etc.) to requisition operator replacement items and accessories, and not a responsibility of the supporting maintenance activity.

b. DA Pam 710-2-1 states that expendable supplies and repair parts issued to medical equipment maintenance shops are maintained only to support the maintenance activity. The primary purpose of these stocks is to give quick supply response to the repairer and to avoid repair delays. Shop stocks are only for internal shop support and are not a supply source for the maintenance activity customers.

c. The following are examples of operator replacement items:

- (1) Transducers.
- (2) Patient leads.
- (3) Batteries accessible to the operator.
- (4) Oxygen fuel cells accessible to the operator.
- (5) Light bulbs.

9-8. Turn-in of expendable and durable supplies

a. Turn in excess serviceable expendable and durable supplies to the unit S-4 within 10 days of the shop stock review. DA Pam 710-2-1 contains turn-in procedures. The Army Master Data File reflects RCC Codes for recoverable repair parts.

b. Primary batteries requiring special handling and disposal are treated as recoverable items but not necessarily repairable and are identified with a recoverability code (RCC) of A.

(1) Dispose of batteries with a RCC of A through the local DRMO. Army SB 11-6 contains specific guidance on disposal. Accomplish coordination for turn-in to DRMO through the SSA.

(2) Batteries containing hazardous materials, such as lithium and mercury are classified for disposal purposes as hazardous waste by the Environmental Protection Agency (EPA).

(3) Magnesium batteries have been determined to be non-hazardous solid waste for disposal purposes; however, they are not to be accumulated and disposal must be controlled.

(4) There are other batteries also holding a RCC of A that require special handling and disposal. They are zinc, silver chloride, certain lead acid batteries, and certain nickel cadmium (NICAD) batteries.

Section II. Tool Control

9-10. Tool control procedures

- a. MERs will use tools and TMDE authorized in accordance with their unit MTOE.
- b. Hand tools, once issued to the medical maintenance activity, require internal procedures. The procedures identified herein do not eliminate the responsibility of the PBO to properly issue these items IAW AR 710-2.
 - (1) All tools (Federal supply classes 5110, 5120, 5130, 5133, 5136, 5140, 5180, 5210, 5220, and 5280) with a unit price greater than \$5.00 are classified as durable property and will be controlled and responsibility specifically assigned. Reference AR 735-5.
 - (2) Durable hand tools with a unit of issue containing more than one item (e.g., box, package, dozen, etc.), and the cost of a single item (bx, pg, dz) is less than \$5.00, will be treated as an expendable item at the user level, even though coded as durable in the AMDF.
 - (3) Control durable items that are components of sets, kits, or outfits using hand receipt annexes or component lists. Individual MER tool kits are normally issued by the PBO to the senior maintenance manager. The senior maintenance manager then issues the tool kits by sub-hand receipt to the individual MER using a component hand receipt or a hand receipt annex IAW DA Pam 710-2-1. A tool, shortage annex must be maintained to identify shortages.
 - (4) Durable items that are not components of sets, kits, or outfits will be controlled using hand receipts and sub-hand receipts IAW DA Pam 710-2-1. Control these items using the tool room procedures described below:
 - c. Use a log or temporary hand receipt for issuing tools.
 - (1) Use DA Form 5519-R (Tool Sign Out Log/Register) when a log is determined to be the preferred method. All tools issued on a DA Form 5519-R should be returned at the end of the day. DA Pam 710-2-1 contains instructions for completing the DA Form 5519-R.
 - (2) Issue tools for longer than 1 day, but less than 30 days, on a temporary hand receipt (DA Form 3161).
 - (a) One copy of the temporary hand receipt should be filed in a suspense file and one copy will be retained by the recipient of the tool(s).
 - (b) Issue tools for longer than 30 days on a permanent hand receipt (DA Form 2062, Hand Receipt/Annex Number).
 - (c) Destroy all copies of the hand receipt when the tools are returned.

9-11. Tool inventory

Inventory all tools on a semiannual basis. Account for lost, damaged, or destroyed non-consumable tools issued through a tool room IAW AR 735-5.

9-12. Tool security

Secure and control hand tools, tool sets, tool kits, and shop equipment according to the physical security standards of AR 190-51.

Section III. Test, Measurement, and Diagnostic Equipment

9-13. General

TMDE are those devices used to evaluate the operational condition of an end item or system, or to identify and/or isolate actual or potential malfunctions.

- a. TMDE-Special Purpose (TMDE-SP) is any device, which is unique to particular items or types of equipment. Examples of TMDE-SP are:
 - (1) Defibrillator Analyzer
 - (2) Infusion Pump Analyzer
 - (3) Electrosurgical Apparatus Analyzer
- b. TMDE-General Purpose (TMDE-GP) is common TMDE used throughout the Army. Examples of TMDE-GP are:
 - (1) Multimeter
 - (2) Oscilloscope
- c. Medical equipment that measures, or indicates a physiological parameter is not TMDE.

9-14. TMDE requirements and authorizations

- a. Requirements and authorizations for TMDE are controlled in accordance with the unit's MTOE.
- b. Exceptions are based on new medical equipment fielded to an organization, for which appropriate TMDE has not yet been documented on the unit's MTOE.
- c. A Memorandum of Authorization (MOA) published by the Command i.e. FORSCOM, PACOM, EUCOM approving a temporary authorization until the Basis of Issue Plan (BOIP) and documentation are completed is the only authorized exception.
- d. Initial issue of authorized TMDE-SP is provided by the materiel developer, USAMMA. For TMDE-GP issues see your unit supply.

9-15. TMDE coordinator

Each unit that is authorized TMDE will designate a TMDE coordinator. The coordinator will act as a central point of contact for all TMDE calibration and repair issues concerning unit organic TMDE. The coordinator will be responsible and have authority for monitoring the unit TMDE management program. This program will be consistent with AR 750-43, AR 750-1, DA Pam 750-8, and TB 750-25.

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9-16. TMDE calibration

a. TMDE used in the repair of medical equipment will be calibrated at the proper intervals. Proper intervals for type classified TMDE calibration are identified in TB 43-180. TMDE not identified in TB 43-180 will be calibrated in accordance with the manufacturer's literature. TMDE not having a current calibration (DA Label 80 or manufacturer's calibration label) will not be used to perform CVC services on medical equipment.

b. TMDE-SP that is type-classified and listed in TB 43-180 with an "f" level indicated in the calibration responsibility column will be calibrated at one of USAMRMC's TMDE-SP calibration sites.

(1) USAMMA has primary responsibility to provide repair and calibration support services for type classified medical TMDE-SP for MTOE units. Units not located in Europe (US, Korea, etc.) will have their TMDE-SP shipped to the following FREIGHT address:

Medical Maintenance Operations Division
Defense Distribution Center, Tracy Site
Building T-255
Tracy, CA 95376-5050
DODAAC: W62SEV

(2) USAMMCE is the designated alternate source to provide repair and calibration support within the European Command (EUCOM) and Central Command (CENTCOM). Units located in the Europe or in an AO/TO supported by Europe will have their TMDE-SP shipped to the following FREIGHT address:

USAMMCE
Huestehoeh Kasern
ATTN: Med Maint (Med Maint)
Building 4136
66953 Pirmasens
(Germany)

(3) The TMDE-SP items shipped must be accompanied by a DA Form 2407 (Maintenance Request) completed as specified in accordance with TB 38-750-2 (Maintenance Management Procedures for Medical Equipment). All TMDE shipped will include appropriate accessories, technical manuals, and/or manufacturer's literature.

c. MEDLOG organizations responsible for providing support operations to maintenance activities deployed to an AO/TO should consider establishment and utilization of a TMDE-SP exchange program. An exchange program in theater will preclude organizations with scarce quantities of TMDE from going extended periods without the appropriate maintenance capacity.

d. TMDE-SP items that are not type classified will be repaired and calibrated in accordance with TB 43-180 or by contractual maintenance support provided by the user/owner.

e. The TMDE Support Coordinator will coordinate with the local Area TMDE Support Team (ATST) or Area Calibration Laboratory (ACL) to receive maintenance and service of TMDE-GP. In the event there is not an ATST or ACL available within the geographical location, coordination may be made with MMOD Tracy to provide maintenance and calibration services of TMDE-GP.

9-17. TMDE calibration documentation

a. All TMDE (GP & SP) will be included in the TMDE Management Information System (TEMIS) database managed and maintained by local ATST or ACL. This automated reporting system assists unit TMDE coordinators with TMDE calibration tracking and scheduling. The report includes the TMDE specifications, as well as, the date last calibrated and the date the next calibration is due.

b. It is the responsibility of the Unit TMDE coordinator to ensure that the results of any maintenance and calibration services performed by an alternate calibration capability are forwarded to the ATST or ACL for proper documentation to the TEMIS database.

Appendix A

References

Section I. Required Publications

Except as noted below, Army regulation and DA pamphlets are available online from the U.S. Army Publishing Directorate (APD) website: <http://www.apd.army.mil/>. Field manuals are available online from the APD (formerly the U.S. Army Publishing Agency (USAPA)) website: <http://www.usapa.army.mil/>. Technical bulletins, medical and USACHPPM technical guides are available online from the USACHPPM website: <http://chppm-www-apgea.army.mil>. DOD instructions are available online from the Washington Headquarters Services website: <http://www.dtic.mil/whs/directives>. Military Standards, Military Handbooks, and Standardization Agreements are available online at the Documentation Automation and Production Service (DAPS) website: <http://assist.daps.dla.mil/>. American National Standard Institute standards are available on line from the ANSI website: <http://www.ansi.org/library/overview.aspx?menuid=11>. Code of Federal Regulations are available online from the Government Printing Office website: <http://www.gpoaccess.gov/CFR/index.html>.

AR 10-5

Organization and Functions

AR 11-9

The Army Radiation Safety Program

AR 40-61

Medical Logistics Policies

AR 190-51

Security of Unclassified (Sensitive and Non-sensitive) Army Property

AR 220-1

Unit Status Reporting

AR 385-10

The Army Safety Program

AR 385-40

Army Accident Reporting and Records

AR 700-4

Logistics Assistance Program

AR 700-15

Packaging of Materiel

AR 700-68

Storage and Handling of Compressed Gases and Gas Liquids in Cylinders, and of Cylinders

AR 700-138

Army Logistics Readiness and Sustainability

AR 700-139

Army Warranty Program

AR 710-2

Supply Policy Below the National Level

AR 735-5

Policies and Procedures for Property Accountability

AR 750-1

Army Materiel Maintenance Policy

AR 750-43

Army Test, Measurement, and Diagnostic Equipment (TMDE) Program

DA Pam 710-2-1

Using Unit Supply System (Manual Procedures)

DA Pam 710-2-2

Supply Support Activity Supply System: Manual Procedures

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DA Pam 750-8

The Army Maintenance Management System (TAMMS) Users Manual

SC 5180-8-A10

Sets, Kits, and Outfits Components List/Hand Receipt for Medical Equipment Set Maintenance and Repair Organizational Maintenance W45334

SC 5180-8-A14

Sets, Kits, and Outfits Components List/Hand Receipt for Tool Kit, Medical Equipment, Maintenance and Repairman's LIN W45334

TB MED 7

Maintenance Expenditure Limits for Medical Materiel

TB MED 521

Occupational and Environmental Health Management and Control of Diagnostic, Therapeutic, and Medical Research X-Ray Systems and Facilities

TB MED 524

Control of Hazards to Health from Laser Radiation

TB 38-750-2

Maintenance Management Procedures for Medical Equipment

TB 43-180

Calibration and Repair Requirements for the Maintenance of Army Materiel

SB 8-75 Series

Medical Logistics Supply Bulletins

Section II. Related Publications

AR 25-30

The Army Publishing Program

AR 40-5

Preventive Medicine

AR 725-50

Requisitioning, Receipt, and Issue System

FM 100-14

Risk Management

SB 700-20

Army Adopted/Other Items

TB MED 1

Storage, Preservation, Packaging, Packing, Maintenance and Surveillance of Materiel Medical Activities

TB MED 523

Control of Hazards to Health from Microwave and Radio Frequency Radiation and Ultrasound

TB 750-25

Maintenance of Supplies and Equipment: Army Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Repair Support Program

21 CFR Subchapter J

Radiological Health

29 CFR 1910

Occupational Safety and Health Administration, Department of Labor Standards

29 CFR 1910.101

Compressed gases (general requirements)

NFPA Code 99

Standard for Health Care Facilities (<http://www.hfpa.org>)

Section III. Prescribed Forms

This section contains no entries.

Section IV. Referenced Forms

DA Form 2062

Hand Receipt/Annex Number

DA Form 2064

Document Register for Supply Actions

DA Form 2404

Equipment Inspection and Maintenance Worksheet

DA Form 2406

Materiel Condition Status Report

DA Form 2407

Maintenance Request

DA Form 3161

Request for Issue or Turn-In

DA Form 3318

Records of Demands - Title Insert

DA Form 5519-R

Tool Sign Out Log/Register

DA Form 5621-R

Leakage Current Measurement, General

DA Form 5622-R

Leakage Current Measurement, EKG

DA Form 5624-R

DC Defibrillator Inspection Record

DA Form 5990-E

Maintenance Request

DA Form 5988-E

Equipment Inspection and Maintenance Worksheet

DA Label 80

U.S. Army Calibrated Instrument

DA Label 175

Defibrillator Energy Output Certification

DD Form 314

Preventive Maintenance Schedule and Record

DD Form 1577

Unserviceable (Condemned) TAG – Materiel

DD Form 1577-2

Unserviceable (Reparable) Tag-Materiel

DD Form 2163

Medical Equipment Verification/Certification

DD Form 2164

X-ray Verification/Certification Worksheet

TB MED 750-2

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Appendix B

Medical Equipment Reporting Procedures

B-1. Purpose

- a. This appendix summarizes policy and procedures for collecting and reporting the status of the physical condition of Army medical materiel IAW AR 700-138, Army Logistics Readiness and Sustainability.
- b. The Materiel Condition Status Report (MCSR) provides commanders with information to analyze and predict equipment readiness and availability and the equipment status of their supported equipment.
- c. Unit equipment readiness goals. The Army equipment readiness goal is 90 percent fully mission capable (FMC).

B-2. Reporting requirements

- a. LINS listed in AR 700-138, appendix B have been designated mission-essential equipment and systems.
- b. IAW AR 700-138, all Active Army and RC units operating equipment listed in its appendix B, will submit materiel condition status reports.
- c. Commanders may use the DA Form 2406 for local use. Any items of equipment required for reporting through local commands that are not identified in AR 700-138, appendix B must be reported separately from the required DA Form 2406 entries.

B-3. Frequency of report

- a. All Active Army units will make a monthly report on DA Form 2406 covering a 1-month period ending the 15th day of each month.
- b. USAR and ARNGUS (including mobilization and training equipment sites (MATES) units will make a quarterly report on DA Form 2406 covering a 3-month period ending 15 January, 15 April, 15 July, and 15 October.
- c. All equipment LINS authorized on the MTOE/TDA and/or on-hand on the last day of the report period and on the unit property book that are listed in appendix B will be reported on DA Form 2406.
- d. If authorization documents are changed before modernization equipment is available for fielding, commanders will designate equipment on-hand as "in lieu of" the newly required equipment for materiel condition status reporting purpose. The "in lieu of" policy will apply only when the equipment is in lieu of modernization equipment. The "in lieu of" equipment should be listed in SB 700-20, appendix H, as an authorized substitute. If the item is not listed in SB 700-20, it is the unit commander's responsibility to initiate the process to incorporate the "in lieu of" item. In lieu of or substitute equipment will be reported on DA Form 2406, only if it is listed in AR 700-138, appendix B, or has been authorized by HQDA change message.
- e. A substitute item is an item authorized for issue instead of or in place of an authorized standard item of like nature and quality. SB 700-20, appendix H, identifies items and procedures for making substitutions.
- f. Items that are substitutes (SB 700-20, app H) or in lieu of appendix B items WILL NOT be reported if they are NOT listed in appendix B, or have NOT been authorized reportable by HQDA.
- g. Equipment borrowed from another unit will not be reported by the using unit (see paragraph 2-6a, AR 700-138).
- h. Equipment on loan is reported by the unit that has the equipment on its property book. When equipment is on loan, the borrowing unit keeps a duplicate DD Form 314 (or automated equivalent). The borrowing unit will give not mission capable supply (NMCS)/not mission capable maintenance (NMCM) data to the owning unit at the end of the report period. The duplicate DD Form 314 goes with the equipment when it is returned to its owner. Both units must ensure that the owner gets the duplicate DD Form 314 when the loan is completed. (See DA Pam 750-8 for DD Form 314 instructions.)
- i. Assets at mobilization and training equipment sites (MATES), unit training equipment sites (UTES), or equipment concentration sites (ECS) are not loaned equipment. The MATES keeps the DD Form 314 for ARNG units. Only the owning USAR or ARNG unit will report this equipment.
- j. Equipment on a DA Form 2407 (Maintenance Request) or DA FORM 5990-E (Maintenance Request) at a support unit/activity is reported NMC only if it has an NMC fault. It is counted FMC when the support unit/activity notifies the owning unit that the equipment has been repaired and is awaiting pick-up.
- k. Equipment that is in a depot or at a depot level repair organization for repair or overhaul and return stays on the unit's property book. That equipment will be reported as NMC for support maintenance.
- l. List equipment on the DA Form 2406 in LIN order.
- m. When only one model is on-hand under a LIN, use one line in columns 9a through 9f to report it. If two or more models are on-hand for a LIN, use multiple lines. The first line (the authorized line) shows the totals for all models under a LIN. The model field is left blank. Then on separate lines beneath that LIN, show the information for each model. Columns 9a through 9e will show the total for all models authorized for that LIN. Leave the authorized column blank on the model lines (see figure 2-1).
- n. For models listed in AR 700-138, appendix B, match the model number exactly. For example, more than one tank has an M1 model number. Each configuration has a slightly different number such as M11P, M1A1, or M1A2.
- o. Units (AA or property book level) that are operating under more than one MTOE/TDA will combine reportable equipment on a single DA Form 2406. Do not submit separate reports for MTOE equipment and TDA equipment under the same UIC and utilization code. If TDA equipment is carried under a UIC that ends in "99", a separate report is required. A separate report is required for each utilization code.

TB MED 750-2

p. The EIC is a three-position equipment code for supply use. The code is put on DA Form 2407 and supply requests for items listed in appendix B. AR 710-2, DA Pam 710-2-1, DA Pam 710-2-2, and AR 725-50 explain when and how to use the codes for supply purposes.

q. Materiel Condition Status Report, DA Form 2406. The following briefly explains the entries required for completing DA Form 2406, Materiel Condition Status Report:

B-4. Medical company 2406 example

a. (Block 1) Period of report. When more than one day is covered, put the Julian date of the first day in the "FROM" space and the last day after "TO". The period of the monthly report is always 28-29-30-31 days. The period of the quarterly report submitted by USAR and ARNG units is always 90-91-92 days.

b. (Block 2) Date Prepared. Enter the Julian date the report is completed.

c. (Block 3) Utilization Code. Put in the Utilization Code from the list below. Use the code or codes for the parent unit making the report.

0--Active Components (except as otherwise listed).

4--Operational Readiness Float (ORF).

7--Army National Guard, except MATES.

8--Army National Guard (MATES).

A--Army Reserve units.

H--U.S. Army Intelligence and Security Command.

K--U.S. Army Training and Doctrine Command.

Q--Service schools.

W--National training centers.

Y--Army War Reserve Prepositioned Sets.

d. (Block 4a) Page number. Put in the page number in sequence.

e. (Block 4b) Number of pages. Put in the total number of the pages in the report. Do not put in this number until the report is done.

f. (Block 5) To: Enter the complete name and address (with APO code) of the parent unit.

g. (Block 6) From: Enter the complete name and address (with APO code) of the parent unit (no higher than battalion) making the report.

h. (Block 7) Unit Identification Code. Must contain the correct six character UIC of the submitting activity (the unit in block 6). This code always begins with a "W."

i. (Block 8) MTOE/TDA no. Should contain the numeric-alpha MTOE or TDA number.

j. Availability status (itemized). Includes columns 9a through 9e. Equipment goes in columns 9a through 9e in LIN order.

k. (Column 9a) Seq. No. Each line is numbered. If only one model is on-hand, a one line entry is needed. When more than one model of the same LIN is or was on-hand during the report period, make a line entry for each model. Use the same basic sequence number with a letter after 1, 1A, 1B, etc; the same LIN will be used. Numeric entries must not exceed two digits; entries recorded as 1, 2, and 3 through 9 should be preceded with zeros (for example, 01, 02, 03). The numbers will start with 01 on the first line and will continue in numeric sequence. When alpha characters are added to numeric digits, the sequence must be numeric/alpha (for example, 01, 01A, 01B, 02, 03, 03A).

l. (Column 9b(1)) Noun. May contain an entry, not to exceed eight characters.

m. (Column 9b(2)) EOS code. For those items reported as a system. (Medical equipment has no systems.)

n. (Column 9b(3)) Model. Enter the model number. Leave blank if the line is an authorized line with separate models below it. Use the exact equipment model identification listed in appendix B. Leave blank if on-hand quantity is zero. Note. For models listed in appendix B, match the model numbers exactly.

o. (Column 9c) ECC-LIN. List the ECC and LIN. The ECC is written first, followed by the LIN (app B), but list the equipment in LIN order.

p. (Column 9d(1)) Authorized quantity. The number of items shown in column 9b(1) that are authorized on the unit MTOE/TDA. When more than one line shows models on-hand (numeric/alpha in column 9a), the authorization block for the "on-hand" line is blank. When an item is on-hand, but not authorized, enter a zero in this block.

q. (Column 9d(2)) On-hand quantity. Put in the number on-hand and on the property book as of the "TO" date in block 1. The day you actually got the equipment is considered a day on-hand. The day the equipment is dropped from the property book, it is no longer "on-hand", and it will not be recorded 'on-hand' that day. When an item is authorized, but not on-hand, enter a zero in this block.

Note: The total of the quantities on-hand in the "Issue lines" must equal the on-hand quantity in the related "authorized line" (for example, total of 2A, 2B, and 2C must equal the quantity entered in the on-hand column of line sequence number 2 (authorized line)).

r. (Column 9e(1)) Possible days. Enter the total number of equipment days the equipment was on-hand during the report period. A single item or system on-hand for one day is one equipment day. Only equipment that was on-hand on the last day of the report period is included. You can get the date the item arrived from the property book office. An entry in column 9e(1) must equal the entries in columns 9e(2), 9e(3)(a), and 9e(3)(b). If column 9d(2) on-hand-quantity is zero, enter zero in column 9e(1).

s. (Column 9e(2)) Available days. Enter the total number of days the equipment was FMC. (Available days equal the possible days minus non-available days.) FMC percent = Total available days divided by total possible days x100. The entry in this column must equal the entry in column 9e(1) minus the sum of the entries in columns 9e(3)(a) and 9e(3)(b). If column 9e(1) entry is zero, enter zero in column 9e(2).

t. Column 9e(3), Non-available days. Displays the number of day the equipment was down. The sum available days and non-available days must equal the possible days. If there are no entries in these columns, the entries in columns, Possible Days and Available Days must be equal.

Appendix C**Maintenance Standing Operating Procedures**

C-1. Internal SOP

An internal SOP should address the following areas:

- a. The receipt for items to be repaired, processing, repair, and disposition of the equipment, to include work order reconciliation procedures.
- b. PMCS.
- c. Medical equipment CVC services.
- d. Inspection and condition coding of medical equipment.
- e. Calibration of TMDE.
- f. Medical equipment electrical safety.
- g. Medical equipment battery maintenance program.
- h. Shop safety to include ionizing and non-ionizing radiation hazards, use of power tools, etc.
- i. Repair parts and tool accountability.
- j. Quality control and assurance.
- k. Recurring reports.
- l. Support to satellites.
- m. Lockout/tag out.
- n. Procedures, responsibilities, and document work flow pertaining to automated reports, to include establishment and maintenance of a database.
- o. Infection control (bi-annual review and approval).
- p. HAZCOM.
- q. Safe Medical Devices Act (SMDA) for reporting equipment incidents.

C-2. External SOP

External SOP should include:

- a. How the equipment hand receipt holders acquire maintenance services.
- b. Normal operating hours for receiving equipment for repair and picking up equipment which has been repaired.
- c. Instructions for completing the work request.

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Appendix D
Desk Reference Manuals

D-1. General

- a. At a minimum, three desk reference manuals should be considered.
 - (1) Repairer's Manual.
 - (2) Repair Parts/Tool Room Manual.
 - (3) Work Order / Automated Maintenance System Procedures.
- b. Desk reference manuals require periodic updating to reflect procedural changes.

D-2. Suggested contents

To illustrate those items to consider for a desk reference manual, the following is a listing that could make up the desk reference manual for the MER:

- a. Copy of the shop's SOP.
- b. Copy of the local commander's maintenance directive.
- c. A listing of wards and clinics:
 - (1) Telephone numbers.
 - (2) Scheduled services base dates.
 - (3) Area maintenance priorities.
 - (4) Names of NCOs.
- d. An explanation of codes needed when performing a TI on a new item of medical equipment required to complete the local work sheets for AMEDDPAS.
- e. Copies of appropriate chapters and appendixes of this bulletin.
- f. Civilian procured repairer handbooks that include formulas, conversion factors and tables, electronic symbols, drill and tap sizes, medical terminology, etc.
- g. Sample forms the repairer will be expected to complete.
- h. A Julian date calendar.
- i. Maintenance expenditure limit graph from TB MED 7.
- j. A good index so the above items can easily be located by the repairer when needed.

TB MED 750-2

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Appendix E

Standard Army Management Information System

E-1. Standard Army Management Information System (STAMIS) for DA TOE medical equipment maintenance activities are:

- a. ULLS-G – used for unit level maintenance administration and management.
- b. SAMS-1 – used at the MEDLOG activity to roll-up supported organizations into some type of report to be utilized for analysis of the AO/TO.
- c. SAMS-E - used for unit level maintenance administration and management, as well as at the MEDLOG activity to roll-up supported organizations. Roll up of supported organizations will enable analysis of the AO/TO maintenance performance and capability.
- d. SAMS-2 – used for reviewing medical equipment maintenance posture, requirements, and shortcomings within Department of the Army MTOE Medical organizations and organizations with medical equipment.

E-2. Maintenance management listings and reports.

- a. Use the following automated reports from your ULLS for evaluating medical equipment maintenance posture within your organization.
 - (1) Monthly Maintenance Performance Report - SDI Report
 - (2) Scheduled Services Work Order Listing - SDI Report
 - (3) Scheduled Services Completion Report - SDI Report
 - (4) Equipment Non-Mission Capable (NMC) Report - SDI Report
- b. Use the following automated reports from your SAMS for evaluating medical equipment maintenance posture within your AO/TO.
 - (1) Consolidated Monthly Maintenance Performance Report - SDI Report
 - (2) Consolidated Scheduled Services Workorders Listing - SDI Report
 - (3) Consolidated Scheduled Services Completion Report - SDI Report
 - (4) Consolidated Equipment Non-Mission Capable (NMC) Report - SDI Report

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Appendix F

Safe Medical Devices Act

F-1. Purpose: To promote the safety of patients, visitors, and staff who, for whatever reason, come in contact with the medical facility's environment of care or medical equipment and to comply with Safe Medical Device Act of 1990.

F-2. Policy:

(a) Appropriate corrective action will be taken to protect the safety of all patients, visitors, and staff of the medical facility whenever information on a product related hazard or potential hazard is brought to the attention of the organization's staff.

(b) The Safe Medical Device Act of 1990 requires that medical device users report to the manufacturer and/or the F.D.A. incidents that reasonably suggest that there is a probability that a medical device has caused or contributed to the death of a patient, serious injury or illness.

(c) Serious illness or injury as defined by the Act is an illness or injury that is life threatening or that either results in permanent impairment of bodily function or permanent damage to a bodily structure or necessitates immediate medical or surgical intervention to preclude permanent impairment of a bodily function or permanent damage to a bodily structure.

(d) Medical devices include but are not limited to ventilators, monitors, dialyzers, and any other electronic equipment, thermometers, components, parts, accessories and related software.

(e) In accordance with Safe Medical Device Act of 1990, the Department of the Army has established appropriate methods for reporting these events. In cases involving medical devices where patients are injured or become seriously ill, a report must be filed within 10 working days to the manufacturer, the FDA if the manufacturer is unknown, and USAMMA.

F-3. Procedure for filing report:

a. When any device failure or user error has had an adverse outcome, the medical personnel who are aware of the incident will complete an incident report and forward it to the Risk Manager and Medical Maintenance within (24) hours. The investigation of the incident will include the following information:

- (1) Patient's name
- (2) Room and bed number
- (3) Name of attending physician notified
- (4) Product name
- (5) Location of product
- (6) Equipment identification number
- (7) Serial number of product
- (8) Model number
- (9) Name of manufacturer, if known
- (10) Brief description of incident

b. Immediately retain all packaging materials and disposable supplies.

c. Control settings, and any observed physical damage will be noted. Device will be impounded and shall be tagged, bagged and sequestered including identifying number and date. Device shall be logged into an impound log with all pertinent data recorded to show a "chain of evidence".

d. Investigation of incident shall be conducted to determine if a device failed or if there was a user error. This investigation shall be carried out by medical maintenance section.

e. Device failure investigation shall be carried out as appropriate before repair work is conducted.

f. All written communication submitted to the FDA, manufacturer, or USAMMA shall be reviewed by the facility Risk Manager prior to submittal. The Risk Manager will determine the appropriateness and that the submitted communication meets the requirements of the Safe Medical Device Act of 1990.

g. Any additional communications with the manufacturer or vendor shall be carefully and completely documented. Written acknowledgments will be requested for all verbal responses given by the manufacturer.

h. Copies of all written communications will be forwarded to the facility Safety Manager.

TB MED 750-2

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Appendix G**Battery Maintenance Program**

G-1. Critical equipment battery replacement

a. It is essential to take a proactive approach to maintaining critical items of medical equipment. Defibrillators, patient monitors, and other lifesaving medical equipment must receive vigilant attention.

b. Battery (typically Nickel Cadmium (NiCad)) operated medical equipment may start malfunctioning at or around the 24-month point due to battery failure. To ensure that critical equipment items function when needed, consider instituting one of the following battery maintenance procedures.

(1) Remove batteries from the service and deep cycle semiannually using a medical battery conditioner and tester. Replace batteries every 36 months regardless of condition.

(2) Completely discharge the batteries semiannually by draining the battery through equipment operation and then fully recharge. Replace the batteries every 18 months regardless of condition.

G-2. Battery replacement management

a. The maintenance internal SOP should include one of the above procedures and a method used to identify the date of the last battery installation.

b. Consider annotating the battery replacement on the DD Label 2163, Equipment Calibration/ Verification/Certification Label.

TB MED 750-2

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Appendix H

Equipment Requiring Calibration/Verification/Certification

H-1. Calibration/Verification/Certification requirements

- a. Properly functioning and calibrated medical equipment is critical to the correct diagnosis of patient illness and the administering of patient care.
- b. Medical maintenance personnel should review the appropriate technical manuals and/or manufacturers' literature to determine calibration requirements and procedures for each item of medical equipment supported.

H-2. Equipment management

- a. Equipment requiring calibration will be individually tracked and monitored. The items should be included in the automated medical maintenance automation system or tracked manually.
- b. The following is a general list of medical equipment that requires periodic calibration.

Amalgamator
 Analyzer, Blood Gas/pH/Pulmonary Function/Nitrous Oxide/Oxygen
 Anesthesia Apparatus (all)
 Angiographic Injector
 Apnea Monitor
 Balance, Electronic/Mechanical
 Blood Cell Counter
 Blood Gas Analyzer
 Centrifuge (All)
 Chromatography Equipment, Gas
 Counter, Blood Cell
 Defibrillator
 Defibrillator/Monitor
 Diathermy Unit
 Electrocardiograph
 Electrosurgical Apparatus
 Fetal Heart Detector/Monitor
 Hemodialysis Unit
 Hood, Chemical/Fume/Laminar Air Flow/Microbiological
 Hypo/Hyperthermia Unit
 Incubator, Infant
 Infusion Pump
 Injector, Angiographic
 Laser, Argon
 Laser, Nd: YAG
 Lithotripter, Ultrasonic
 Monitor, Apnea/Fetal Heart/Physiologic/Pressure/Pulse/Respiration
 Nitrous Oxide Analyzer
 Oxygen Analyzer
 pH Analyzer
 Physiologic Monitor
 Pulmonary Function Analyzer
 Pulse Oximeter
 Radiographic Units (all)
 Spectrometer, Mass
 Spectrophotometer
 Spirometer
 Stimulator, Nerve
 Ultrasonic Unit, Diagnostic
 Ultrasonic Unit, Therapeutic
 Ventilator
 Warmer, Blood
 X-ray Apparatus (all)

TB MED 750-2

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Appendix I

Warranty/Contract Program

I-1. The objectives of the Army Warranty Program, as expressed within AR 700-139 are to—

- a. Achieve and sustain a cost-effective warranty program for Army materiel.
- b. Minimize user burden and promote user satisfaction.
- c. Control warranty execution to assure maximum use and benefit from warranties.
- d. Provide information for warranty administration, execution, and evaluation.
- e. Achieve uniformity in managing and executing warranties.

I-2. Warranty coverage

Army warranties for centrally procured materiel should consider two types of coverage: individual item failure and systemic defect. Replacement assemblies may require both types of coverage.

a. Individual item failure coverage requiring individual warranty claim actions apply to MAC functions of maintenance or repair parts and special tool list (RPSTL) coded recovery functions that occur no lower than the field maintenance level for items and their subsidiary parts.

b. Systemic defect coverage provides protection to the lowest level of impact or expense and requires a contract remedy that may cover all contract deliverables.

I-3. Fielding of warranty items

a. Medical equipment fielded by USAMMA will be in accordance with appropriate materiel release, fielding, or transfer documents.

b. Warranty information and specific warranty requirements should be addressed in the MFP.

c. Warranty / contract issues or concerns should be addressed to USAMMA.

TB MED 750-2

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Appendix J

Medical Equipment Maintenance Evaluation and Assessment

J-1. Medical maintenance program responsibility

Unit commanders are responsible for the unit's medical equipment maintenance program. Programs that receive command emphasis typically flourish better than those which do not.

J-2. Evaluation and assessment

Commanders should periodically assess their unit's medical equipment maintenance program utilizing a checklist similar to the sample depicted in Figure J-1.

Maintenance POC: Reviewer:	Assessment		
	SAT	UNSAT	NA
<p>1. References: AR 40-61, AR 700-138, AR 710-2, AR 750-1, AR 750-43, DA PAM 710-2-1, DA PAM 710-2-2, DA PAM 750-8, TB MED 7, TB MED 521, TB MED 750-2, TB 38-750-2, TB 43-180, SB 8-75 Series, SC 5180-8-A10, SC 5180-8-A14, NFPA 99, Manufacturers Literature</p>			
<p>2. Maintenance: Questions for Unit Commanders to evaluate the medical equipment maintenance procedures.</p> <p>Are TMs or operator and service manuals on hand for all medical equipment? AR 40-61</p> <p>Is all MTOE medical equipment requiring PMCS listed in the ULLS computer?</p> <p>Is there a valid Equipment Maintenance and Inspection Worksheet (5988-E for ULLS) or DA 2404 on hand reflecting most recent maintenance service?</p> <p>Are scheduled maintenance services and calibrations being conducted IAW TMs and/or manufacturer's literature?</p> <p>Do all equipment requiring calibration services have a DD Form 2163 annotated with a valid date and affixed on the equipment item? AR 40-61</p> <p>Are DA Forms 2407 (Maintenance Request) being maintained on non-operational equipment and turn-ins? TB MED 750-2, DA PAM 750-8</p> <p>Does the defibrillator equipment have a DA Label 175 annotated with valid data and is there a current and completed DA Form 5624-R on file in the maintenance shop? TB MED 750-2</p> <p>Are safety tests being conducted on all medical equipment that has been repaired and is it reflected on the DA Form 2407? AR 40-61, TB MED 750-2</p> <p>Does unit have an Operator Maintenance Program? AR 750-1, TB MED 750-2</p> <p>Is there a valid Equipment Maintenance and Inspection Worksheet DA Form 2404 (5988-E for ULLS), on hand reflecting the most recent operator PMCS?</p> <p>Are the results of the operator PMs being utilized and work orders submitted to Medical Maintenance within 3 working days? AR 750-1</p> <p>What organization provides your next level of maintenance support?</p>			

Figure J-1. Sample Commander's Medical Equipment Maintenance Assessment Checklist.

TB MED 750-2

Maintenance POC:	Assessment		
Reviewer:	SAT	UNSAT	NA
<p>3. Maintenance Management:</p> <p>Does the maintenance section have an internal SOP? AR 750-1, TB MED 750-2</p> <p>Does the section SOP cover all the individual subjects evaluated in this checklist?</p> <p>Are the SOP and its appendixes written in sufficient detail to enable new personnel to comply with the procedures?</p> <p>Has the SOP been updated within the last 18 months? TB MED 750-2</p> <p>Has the Commander published a maintenance directive delineating supervisor responsibility and is sufficient emphasis placed on equipment and operator maintenance per AR 750-1 and TB MED 750-2?</p> <p>Is the Customer Assistance Guide comprehensive enough to describe all customer services to include procedures for units to request assistance?</p> <p>Are DA Forms 2406 reviewed monthly to monitor readiness and actions taken to assist units when necessary? AR 220-1, AR 700-138</p>			
<p>4. TMDE: Questions to ask for proper use and maintenance of TMDE</p> <p>Is there an assigned TMDE coordinator in the maintenance section? TB MED 750-2</p> <p>Is sufficient and modern TMDE available to ensure calibration and verification of medical equipment? AR 750-43</p> <p>Does all TMDE have a DA Label 80 with current calibration dates? AR 750-43, TB 43-180</p> <p>Is there a training program to ensure maintainers are familiar with the proper use of TMDE? TB MED 750-2</p> <p>Are maintenance personnel familiar with the theater TMDE support structure?</p> <p>The point of contact for TMDE-SP calibration support is MMOD, Tracy (209) 832-4557, DSN 462</p>			
<p>5. Tool Control</p> <p>Have individual tool kits been sub-hand receipted to repair personnel?</p> <p>Is a shortage annex maintained in the toolboxes and on file?</p> <p>Are the tool kits inventoried on a semiannual basis?</p> <p>Have replacement tools been ordered for damaged or lost tools?</p> <p>Has a tool custodian been appointed in writing? AR 750-1; TB MED 750-2</p> <p>Has the activity initiated and maintained DA Form 5519-R (Tool sign-in and out-register). TB MED 750-2</p>			

Figure J-1. Sample Commander’s Medical Equipment Maintenance Assessment Checklist. (continued)

Appendix K

Preventive Maintenance Inspection Checklists

K-1. Category A - all items. This checklist should be applied to determine the condition of all items.

- a. The overall appearance and finish of the item will be up to organizational standards.
- b. Interior and exterior of the item will be free of rust, corrosion, solutions, dirt, lint, and deposits.
- c. Doors, drawers, panels, shelves, catches, latches, hinges, stops, door pulls, handles, knobs, and casters will be properly tightened or adjusted to operate smoothly.
- d. Component holders, clips, and receptacles will be intact and properly adjusted.
- e. Control knobs, mechanical locks, and levers will be securely attached to the driven element and properly indexed.
- f. Nuts, bolts, screws, and other hardware will be tight and in good condition.
- g. Operator's manual will be on hand in the organizational element utilizing the item.

K-2. Category B - hydraulic/mechanical. This checklist will be used as a guide to determine the condition of items which employ chains, gears, belts, bearings, levers, and/or hydraulic systems.

- a. All gears will be free of excessive backlash.
- b. All chains, gears, bearings, and bearing surfaces will be free of excessive wear and properly adjusted.
- c. Axles, shafts, and levers will be free of excessive wear and play, and properly lubricated.
- d. Belts, pulleys, and levers will be free of excessive wear and properly adjusted and aligned.
- e. Hydraulic systems with their trips, locks, stops, and release mechanisms will be free of excessive wear and properly adjusted, fluid level will be proper and the system free of leaks.
- f. Casters will be checked and lubricated with general purpose lubricant.

K-3. Category C - positive/negative pressure. This checklist will be applied to determine the condition of items which involve positive or negative pressures or the use of one or more medical gases, such as oxygen and nitrous oxide.

- a. Where applicable, rubber parts, components, and fittings will exhibit original elasticity and shape. They will be free of cracks, splices, punctures, and faulty fittings. When electrical equipment is used in a flammable location, conductivity will be verified in accordance with NFPA 99.
- b. High pressure tubing will conform to the above and be free of leaks and frayed covering. All fittings and connectors will be in good condition and securely attached to hose ends.
- c. All controls, regulators, flow meters, and flush valves will be properly adjusted to accurately regulate flow of gas. All temperature indicators will be checked to ensure accuracy.
- d. Glass and plastic covers on meters, inspection ports, and containers will be free of cracks and chips. They will be clean and properly positioned for leak-free operation.
- e. Safety and pop-off valves will be in proper operating condition.
- f. Air evacuation systems will be capable of maintaining the desired vacuum within design limitations.
- g. Grounding systems will be of the approved type and properly installed.

K-4. Category D - heating/cooling/mixing. This checklist will be applied to determine the condition of items which heat, cool, regulate, mix, pump, or circulate water and/or produce steam.

- a. All water and steam chambers will be free of excessive rust, corrosion, and lime deposits.
- b. All gasket material (such as rubber, cork, and composition type) will be free of breaks or wear which might result in an improper seal.
- c. Door and lid closing mechanisms will operate freely and be adjusted to ensure a proper seal.
- d. There will be no leaks (steam or water) in the plumbing, valves, valve packing, regulators, boiling chamber, tanks, or pumps.
- e. All valves, regulators, controls, steam traps, and vacuum breakers will operate properly.
- f. The heating system (electrical, fuel, or steam) will provide the proper temperature and/or pressure in the prescribed time under normal operation.
- g. Low water cutoff and boiling point cutoff switches will function properly.

K-5. Category E - electrical/electronic. This checklist will be applied to determine the condition of items which employ electrical or electronic components.

- a. Electrical connectors (jacks, receptacles, or plugs) will be of approved type, free of cracks or breaks, and properly attached to the line cord or cable. Mechanical indexing mechanisms to prevent improper alignment or mating of plugs and receptacles will be free from wear or damage.
- b. Cables, cords, and internal wiring will be of an approved type and of proper wire size to safely carry the required current. In addition, all cables, cords, and internal wiring will be of sufficient length and free of unsafe or unsightly splices and of frayed, cracked, abraded, or brittle insulation.
- c. Cables, clips, studs, and terminals will be free of dirt, rust, corrosion, and other deposits.
- d. Switches, circuit breakers, relay points, and selectors will not be dirty, corroded, excessively worn, or pitted.
- e. Grounding systems will be of an approved type and properly installed.
- f. All electrical components (relays, transformers, capacitors, electron tubes and resistors) will operate without overheating.
- g. Heating elements will produce and maintain the temperature rise required for proper operation.
- h. Electrical meters will respond to the appropriate control and indicate properly.

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i. Electrical components (such as connectors or switches) on explosion proof equipment will conform to the requirement of the NFPA 99.

j. Batteries will be properly charged and free of cracks, breaks, or leaks. Electrolyte of wet cell batteries will be at the proper level.

k. Electrical leakage currents shall be within acceptable limits IAW NFPA 99. Unless specified otherwise, frequency and procedures for testing leakage current shall be as prescribed by AR 40-61, NFPA 99, and this bulletin.

K-6. Category F - electric motors. This checklist will be applied to determine the condition of items which employ electric motors.

a. The electric motor will operate under load without excessive variation, hunting (varying speed), or noise.

b. The electric motor will operate without excessive temperature rise when operated at the rated duty cycle and mechanical load.

c. The mechanical linkage between motor and load (belts, pulleys, chains, gears, and shafts) will be adjusted for proper drive and be free of excessive wear.

d. Oil and grease seals of rotating and reciprocating members will be in place and there will be no evidence of excessive leaks.

e. Brushes, brush rigs, and commutators will be clean and free of excessive wear. Brushes and brush rigs will be properly adjusted and free of excessive arcing during operation.

f. The bearings of the motor and mechanical load will be clean, free of excessive wear, and properly lubricated.

Appendix L

Sample Combat Support Hospital Internal Standing Operating Procedures

L-1. Structured maintenance support program

- a. Unit commanders are responsible to establish and maintain structured medical maintenance support programs.
- b. The program should by design enhance the unit's mission capability in accordance with the readiness objectives as defined by AR 700-138.

L-2. Commanders at all levels:

- a. Provide leadership, supervision, and management control of materiel maintenance programs.
- b. Established standing operating procedures for performing maintenance operations.
- c. Emphasize the importance of safety and maintenance and ensure that subordinates are held accountable for the conduct of maintenance operations.

L-3. Standing operating procedures

- a. Standing operating procedure should consist of two parts, an internal SOP to standardize internal shop operations and an external SOP (sometimes referred to as a customer assistance manual) addressing standard procedures for receiving medical maintenance support.
- b. Figure L-1 is a sample Combat Support Hospital (CSH) Medical Maintenance Internal SOP.

**HOSPITAL
MEDICAL MAINTENANCE
INTERNAL SOP**

Section I. General

1-1. Purpose: This SOP establishes basic principles, policies and procedures to be used as a standard guideline for the efficient operation of the Hospital Medical Maintenance Section.

1-2. Scope: This SOP applies to all personnel assigned or attached to the hospital Medical Maintenance Section.

1-3. References:

- a. AR 40-61
- b. AR 750-1
- c. TB 38-750-2
- d. TB MED 750-2

1-4. Responsibilities:

- a. Chief, Medical Maintenance Section will ensure that:
 - (1) Basic concepts, objectives, and policies are met for the maintenance of medical equipment.
 - (2) The maintenance of hospital medical equipment is effectively performed throughout its lifecycle.
 - (3) Maintenance programs for repair, preventive maintenance (PMCS) calibration/verification/certification (CVC), and electrical safety testing are implemented and performed consistent with available resources.
 - (4) Planning, guidance, and assistance are provided to other organizational elements which impact on the medical maintenance mission.
 - (5) Guidance is provided to the S-2/3 in the development of educational and training programs in maintenance for equipment operators and medical equipment repairers.
 - (6) Commander and staff are frequently updated on the status of medical equipment maintenance and associated programs.
 - (7) A master file copy of both operator and maintenance manuals has been established in the maintenance section for all equipment on hand.
 - (8) Assigned Medical Equipment Repairers are utilized for medical maintenance and not assigned additional duties which may adversely affect the maintenance of medical equipment.
- b. NCOIC, Medical Maintenance Section works under the general supervision of the Branch OIC and will ensure that:
 - (1) Programmed scheduled/unscheduled workloads are assigned to individual repairers commensurate with their training and in accordance with this SOP.
 - (2) His or her counterparts and hospital staff are informed of any issues concerning medical equipment maintenance services.
 - (3) Knowledge and application of maintenance service procedures are in accordance with military and/or manufacturer's instructions.

Figure L-1. Sample CSH Medical Maintenance Internal SOP.

- (4) Required administrative records are maintained in accordance with applicable regulatory guidance.
- (5) Soldiers are recognized for outstanding performance of duties. Conversely, disciplinary problems or additional training requirements should also be documented and brought to the attention of the appropriate level of command.
- (6) Property accountability and security procedures are in place IAW regulations and directives governing security, accountability, and control of tools, TMDE, and other Army property.
- (7) Safety procedures are strictly adhered to during maintenance operations.
- c. Medical Equipment Repairers work under the general supervision of the Branch NCOIC and will ensure that:
 - (1) Documentation on work orders and associated maintenance forms is legible and in compliance with this SOP and other applicable directives.
 - (2) Safety procedures are strictly adhered to during maintenance operations.
 - (3) Preventive maintenance is performed in accordance with applicable technical manual or manufacturer's literature.
 - (4) Safety inspection/testing is performed in accordance with AR 40-61 and this publication.
 - (5) Personal responsibility is assumed for individual training and career development.
 - (6) Unsafe equipment is brought to the attention of user/operator personnel and their supervisory personnel.
 - (7) All maintenance related problems are communicated to their supervisors.

**Section II.
Maintenance Policies**

2-1. Scheduled Services Program

a. Scheduled maintenance is all actions performed in an attempt to retain an item in a specified condition by providing systematic inspection, detection, and prevention of incipient failures. Scheduled maintenance includes PM, CVC, and Electrical Safety Testing.

(1)PM - 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 in the -10 and -20, equipment technical manuals, and lubrication orders.

(2)CL - the comparison of a medical system or medical device of unverified accuracy to a measurement system or device of known accuracy (which is directly traceable back to the National Institute of Standards and Technology (NIST)) to detect and correct if necessary, any deviations from required performance specifications of the medical system or medical device.

(3)ST - the preservation of an electrically safe environment for patients and staff through the evaluation and assessment of medical equipment to identify and correct electrical safety hazards that may exist in health care facilities.

b. Scheduled maintenance will be performed in accordance with AR 40-61, TB MED 750-2, and the equipment manufacturer's literature with regard to frequency of services.

c. All services will be documented on a DA Form 2404 using the format specified in TB 38-750-2 with the following exceptions:

(1) Column b - Responsibility for the performance of corrective action will be annotated as being either equipment operator (OM) or Medical Maintenance Section (MM).

(2) Column c - Nomenclature, serial number and MMCN number of each item serviced in that section.

(3) Column d - When corrective action is to be accomplished by the equipment operator, the corrective action required will be indicated (e.g. clean, replace, order etc.).

(4) Any deficiencies listed on the operator DA Form 2404 that require operator level replacement components, parts, or accessories must have the NSN and/or the manufacturer's part number for the items and the document number confirming the item was ordered, recorded in the corrective action column (column d).

d. During the performance of scheduled services, minor repairs beyond the capability of the operator will be performed by medical equipment repairer. Upon completion of these minor repairs, the medical equipment repairer performing the repairs will initial the corrected block on the operator DA Form 2404.

e. When equipment repairs are expected to exceed 10/15 minutes, the corrective action will be to submit a work order. (When the corrective action is to submit a work order, ensure the hand receipt holder or designated representative responsible for the equipment is aware of the status of their equipment).

f. Upon completion of scheduled services within each section, items that did not receive services will be identified along with the reason services were not performed. A memorandum identifying the items unavailable for services along with a copy of the medical maintenance DA Form 2404 will be provided to the hand receipt holder and the Commander. For equipment that did not receive services due to not

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

being located, the memorandum will be forwarded to the Property Book Officer listing these items so that appropriate property accountability actions are taken. One copy of all medical maintenance documentation will be provided to the hand receipt holder. The hand receipt holder must sign the completed documentation acknowledging receipt and understanding of his or her responsibilities.

g. Medical Maintenance personnel performing scheduled services in each section will consult with equipment operators to ensure operators are familiar with the unit medical maintenance policies and procedures.

2-2. CVC Services

a. CVC services will be performed IAW applicable TM or manufacturers literature and any other applicable guidance.

b. Upon receipt of new equipment, the TM or manufacturers literature will be researched to determine if CVC services are required. When so indicated, the appropriate manual and automated records will be initiated and the equipment placed on the scheduled services program.

c. Upon completion of CVC services, the affixed DD Form 2163 will be annotated. See TB 38-750-2 for instructions. In addition to annotating the DD Form 2163, ensure the completion of CVC services performed are documented on the equipment's manual and automated maintenance history.

d. When performing CVC services for x-ray equipment, in addition to annotating the affixed DD Form 2163, a DA Form 2164 (X-ray Verification/ Certification Worksheet) must be completed IAW TB 38-750-2. A separate sheet of paper will be attached to the DD Form 2164 to indicate the manufacturer, model, serial number and date of calibration expiration of all items of TMDE used to perform the calibration. All documentation will be maintained on file pending completion of the next X-ray calibration.

e. Defibrillators will receive CVC services semiannually, using a defibrillator analyzer. A DA Form 5624R (DC Defibrillator Inspection Record) will be used to record the results of the calibration service. In addition, a DA Label 175 (Defibrillator Energy Output Certification Label) will be affixed to the unit. The DA Form 5624R will be maintained on file 6 months pending the next CVC service.

f. In reference to calibration of scales, TB 43-180 does not require calibration of scales other than those scales used at the local medical treatment facility (MEDDAC) that are designated as the official scales for weight determination. Upon request from the Hospital staff, a courtesy inspection of scales used for screening purposes within the unit may be performed, but a DD Form 2163 will not be affixed to the scales.

2-3. Electrical Safety

a. A continued effort will be made to provide an electrically safe environment within the hospital. Protecting the patients and staff from electrocution and electrical hazards is essential.

b. All medical equipment will receive an electrical safety test after repairs or modifications are performed. Completion results of all electrical safety tests will be documented on appropriate maintenance forms.

c. If equipment does not meet required limits, the following steps will be taken:

(1) DA Forms 5621-R (Leakage Current Measurements, General) or DA Form 5622-R (Leakage Current Measurements, EKG), as appropriate, will be prepared for the item or system. The forms will document defects, recommendations and actions taken. Refer to TB 38-750-2, Maintenance Management Procedures For Medical Equipment, for completion instructions and examples of the Leakage Current Measurements, General and Leakage Current Measurements, EKG forms.

(2) A work order must be initiated to correct the defect. Upon completion of the repair, a copy of the completed work order will be attached to the appropriate current leakage form and filed for a period of one year.

2-4. Unscheduled Services Program

These services include emergency and routine repair of medical equipment. These repairs may be performed either in shop or on site at equipment location. Other forms of unscheduled services are technical inspections and equipment installation or assembly. Unscheduled services should be submitted utilizing a work order from the requesting section.

2-5. Direct Support Maintenance

a. The local MEDCOM Installation Medical Supply Activity (IMSA) has responsibility for providing Direct Support level maintenance to TOE medical units as stated in AR 40-61. When the availability of maintenance support from the IMSA is resource constrained, contact USAMMA to coordinate maintenance support.

b. All efforts to accomplish medical maintenance missions at unit level will be exhausted prior to request for support. Examples of need for support are lack of personnel or TMDE.

c. All medical equipment submitted to direct support will be submitted on a work order with the receipt copy being maintained in Medical Maintenance along with original work order from equipment hand receipt holder.

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

**Section III
Safety Program**

3-1. Shop Safety

General shop safety rules will be practiced in the hospital medical maintenance section at all times. Important points of shop safety are:

- a. Prevent electrical shock by identifying hazards and following safe repair procedures;
- b. Follow safe handling procedures for medical equipment that may be contaminated;
- c. Be familiar with fire protection rules, plans and evacuation routes;
- d. Ensure there is proper ventilation for respiratory protection while performing any task where toxic materials, fumes, mists, or vapors are used or produced.
- e. When working on x-ray equipment, ensure proper radiation safety procedures are followed at all times. Safety procedures for operation of x-ray equipment includes wearing of x-ray film badges, posting of warning signs making others aware that an x-ray unit is in use, and ensuring proper shielding requirements from radiation source are met.
- f. When using power equipment, proper eye and hearing protection devices must be worn.
- g. All staff members must be familiar with proper operation and location of fire extinguishers and eye wash system located within the medical maintenance shop.

**Section IV
Material Maintenance Management**

4-1. General

- a. Maintenance management is the process of establishing objectives to carry out maintenance responsibilities. Maintenance management consists of those continuing actions of planning, organizing, controlling and evaluating the use of manpower, funds, and facilities to accomplish missions and tasks.
- b. A prime objective of the medical maintenance supervisor is to ensure optimal management and control of critical maintenance resources. Accomplishment of this objective is assisted by utilizing a management data collection system to monitor the performance of the medical maintenance section in relation to established performance standards.
- c. The medical maintenance section will use the maintenance automation system (see TB MED 750-2, Appendix E) authorized to MTOE organization for management of medical equipment maintenance and repair parts within the Hospital.

4-2. Work Load Management

- a. The NCOIC of medical maintenance must analyze requirements and direct resources toward the accomplishment of maintenance operations. The NCOIC must forecast requirements for PMCS and unscheduled services using information available from the authorized maintenance automation system outputs (see appendix E).
- b. Workload control priorities are defined in AR 40-61 which states that scheduled services take precedence over all other services except emergency repairs. While in garrison, emergency repairs are those required to restore DA Form 2406 reportable medical equipment to a fully mission capable condition. When deployed, an emergency repair work order is any work order submitted on priority 01-03 equipment, which must be signed by the chief or NCOIC of the medical maintenance section.

4-3. Man-Hour Accounting

- a. A man-hour accounting system will be used by the medical maintenance section to identify the use of duty hours for each direct labor person within the Medical Maintenance Section.
- b. All direct labor personnel will be familiar with the following terms when completing individual time sheets:
 - (1) Reporting period. Each month consists of one reporting period. The reporting period is from the first day of the month to the last day of the month.
 - (2) Overtime. Overtime will be based upon a 40-hour week (8 hours per day for each duty day) within the report period. Man-hours expended in excess of this standard will be considered overtime.
 - (3) Assigned man-hours. This is the number of hours available based on the number of duty days multiplied by 8 hours per day during the report period.
 - (4) Available man-hours. These are man-hours available for production of direct or indirect labor.
 - (5) Direct labor. This is labor expended on equipment either performing scheduled or unscheduled services.
 - (6) Indirect labor. This is labor expended performing duty within the medical maintenance section that is not directly related to performing services on a piece of equipment.
 - (7) Duty absence. All time expended performing military training, inspections, parades, guard duty, offensive maneuvers, formations and time away from the section due to any other military requirements.
 - (8) Non-duty absence. These are man-hours spent during duty time such as official leave, sick call, passes and excused personal time to take care of personal business.

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

Section V
Maintenance Shop Stock/Tool Control Procedures

5-1. Repair Parts Management

a. Standard and nonstandard repair parts will be managed IAW the guidance provided in AR 40-61, AR 710-2, TB MED 750-2, and this SOP.

b. Shop stock (demand supported stock), mission essential, bench stock and minimum order repair parts are authorized IAW AR 40-61. The authorized maintenance automation system (see appendix E this publication) will be used when available to manage and account for repair parts.

5-2. Shop Stock

a. Selection of items for stockage will be based on three demands within a 180-day period. Once a repair part has met the criteria for initial stockage, at least one demand within a 180-day period must occur to retain it as a stockable item.

b. Computation of the requisitioning objective (RO) and reorder point will be IAW AR 40-61 and AR 710-2.

5-3. Mission Essential

The commander may authorize stockage of parts based solely on the premise that these items are deemed essential to support the mission. These repair parts will normally be associated with:

a. Lifesaving equipment.

b. Equipment for which the manufacturer no longer supply parts.

c. New equipment until demand data can be established.

5-4. Bench Stock

a. Bench stock is defined in AR 710-2. Bench stock will not include repair parts unique to an end item of equipment.

b. Bench stock will be managed IAW AR 710-2, and DA Pam 710-2-2.

c. Bench stock replenishment tags (DA Form 1300-4) are not required. The authorized maintenance automation system (see TB MED 750-2, Appendix E) generated bench stock listing provides all of the information required on the replenishment tag. The bench stock listing will be reviewed semi-annually by the maintenance officer.

d. Bench stock costs are not included in the cost of repair; however accounting for bench stock parts is required in order to provide an audit trail. Work orders will include all parts used, to include bench stock parts (except common hardware and bulk material such as nuts, bolts, etc.). Bench stock parts used will be identified on the work order. Work orders will indicate "n/c" meaning there is no charge.

5-5. Minimum Order

Shop stocks purchased as a result of minimum order requirements which are in excess of the stockage objective or not demand supported are authorized to be retained in shop stock and reduced through attrition. The DA Form 3318 for these items will be annotated to indicate that the item from the vendor is MO and the minimum dollar order (e.g., MO \$100.00). Repair parts procurements requiring a minimum order should be ordered through the USAMMA. Under the auspicious of the AMEDD Centralized Repair Parts Program (ACRPP), USAMMA will incur all additional costs associated with minimum order requirements.

a. The Hospital has been designated as a Force Activity Designator (FAD) XXXX unit. The medical maintenance section can use one of three priorities when requisitioning parts. These priorities are 02, 05, and 12.

b. The maintenance officer and NCOIC are the only authorized personnel that can initial off on 02 and 05 repair part requisitions.

c. The individual certifying 02 and 05 requisitions will place their initials in column h of the document register (DA Form 2064) for each request submitted.

5-5. Request for Repair Parts

a. The work order may be used to request repair parts that are known to be stocked in shop supply. All requests for repair parts will be reviewed, approved and initialed by the NCOIC or the maintenance officer.

b. A DA Form 3161 will be used to order repair parts that are not stocked in shop supply. The DA Form 3161 will be attached to the work order and filed in the awaiting parts file once the repair part has been ordered.

c. All repair part requisitions will be ordered on a DA Form 2765-1 for standard repair parts or a DA Form 1348-6 for parts that are non-standard and must be local purchased. All class VIII-repair parts should be ordered through the hospital medical supply section. All class 9-repair parts should be ordered through the motor pool TAMMS/PLL clerk.

d. Once the repair part has been ordered, it must be logged on the document register with the applicable document number. The demand must also be annotated on the DA Form 3318 with the document number and entered into authorized maintenance automation system as a due-in (see the ULLS-G User Manual).

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

5-6. Tools Accountability

- a. AR 735-5 states that all tools with a unit price greater than \$5 are classified as durable property that must be controlled and responsibility assigned using a DA Form 2062.
- b. Durable items that are components of sets, kits, or outfits will be controlled using hand receipt annexes or component lists. The senior maintenance person will sign for tool kits and individual tools from the property book officer and issue the tool or kit by sub-hand receipt to the individual repairperson.
- c. Durable items that are not components of a set, kit, or outfit will be controlled using hand receipts and sub-hand receipts. These items may also be controlled using tool room procedures described below:
 - (1) Tools issued for one day or less will be issued using an internal log or temporary hand receipt.
 - (2) Tools issued for longer than one day but less than 30 days will be issued on a temporary hand receipt. Hand receipts (DA Form 3161) will be completed in duplicate. The original will be filed in the medical maintenance section and the copy will be given to the individual signing for the tool(s). Once the item or items has been returned, both copies of the temporary hand receipt must be destroyed.

5-7. Inventory of Tools

- a. All tools will be inventoried on a quarterly basis. Lost or damaged tools will be annotated on a DA Form 2062 shortage annex.
- b. Tools that are lost due to negligence on the part of the responsible individual must be replaced by that individual either by direct replacement or a statement of charges.

**Section VI
Shop Operations**

6-1. Retention/Disposition of Medical Maintenance Records

- a. Retention/Disposition of completed work order (Maintenance Request) will be kept on file for a period of one year following the close date. File in work order number sequence by close date.
- b. AR 25-30, Chapter 3, is specific in that the creation of a form for a purpose for which a higher echelon form exists is prohibited. Accordingly, the hospital medical maintenance section will use existing forms (i.e., work order, DA Form 3161) for managing maintenance requests and repair parts rather than a variety of locally devised forms. Likewise, the use of commercially procured labels, stickers or forms to document performance of safety tests or CVC services is prohibited. Use only those forms listed in TB 38-750-2.
 - (1) Automated MMCN listing will be maintained for a period of 90 days with a current listing being produced and filed on a monthly basis.
 - (2) Automated Maintenance Performance Report will be maintained for a period of one year with a current report being reviewed and filed monthly.

6-2. Priorities

- a. The complexity, density and the availability of maintenance resources require the establishment of priorities for the repair and/or performance of scheduled maintenance services. The priority system developed at the CSH Medical Maintenance Section requires strict adherence.
- b. The significance of each area within the hospital to the overall delivery of medical care must be evaluated to determine each section's priority. The following is the list of hospital sections and their priority:
 - (1) Critical Care Areas:
 - (a) OR 1/2/3 Priority 02
 - (b) ICU 1/2/3/4 Priority 02
 - (c) EMT Priority 02
 - (2) Critical Support Areas:
 - (a) CMS 1/2/3 Priority 05
 - (b) Labs Blood/General Priority 05
 - (c) X-ray Priority 05
 - (3) Other areas:
 - (a) ICW 1-8 Priority 12
 - (b) MCW 1-10 Priority 12
 - (c) Clinics/Dental Priority 12
 - (d) Pharmacy Priority 12
 - (e) Misc. non patient care areas Priority 24
- c. The basic section priority will be assigned to all equipment maintenance requests received from that area with the exception of critical or lifesaving equipment. Any exception to this policy must be approved and initialed on the work order by the maintenance officer or NCOIC.

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

d. Selected priorities will be used for critical or lifesaving medical equipment. These pieces of equipment will receive a higher priority than the section priority. For example: A defibrillator in an ICW with a priority of 12 would be a priority 01 because it is a lifesaving critical piece of equipment.

e. In garrison, the highest priority will be 02. Priority 02 is reserved for DA Form 2406 reportable items in a non-mission capable status.

6-3. Scheduling and deferring maintenance

a. AR 40-61 stipulates that medical equipment maintenance scheduled services in field medical units will be completed annually. The exception to this being defibrillators, which should be tested semi-annually. The maintenance officer may increase other equipment items to a semi-annual schedule. During prolonged exercises or missions involving patient treatment, scheduled safety testing of electrically operated medical equipment designated for use in critical care areas will be performed on a semi-annual basis.

b. Due to the maintenance resources available and the configuration of DEPMEDS, a cyclic scheduled maintenance program is necessary. This means that 100% of the medical equipment in the hospital must be accomplished over a 12-month period. In order to accomplish this requirement, a certain number of sections or wards must be serviced each month. Determination as to which areas will be serviced during a particular month will be coordinated between the medical maintenance staff and Department of Nursing.

c. There will be times when a scheduled area will not receive services due to mission requirements or a shortage of maintenance personnel or resources. When scheduled maintenance is deferred, the action must be documented. The reason services were not performed will be annotated on the scheduled maintenance listing and initialed by the OIC or NCOIC of the Medical Maintenance Section. A copy of services not performed will be forwarded to the Chief Wardmaster who will coordinate with the medical maintenance NCOIC as to when the deferred services can be accomplished.

6-4. Equipment Management

a. Items of equipment requiring an individual historical record will be assigned an MMCN number. These items will be determined by maintenance managers based on item cost and type.

b. Items of non-technical equipment or equipment that does not require a maintenance history will be considered a group managed item. Group managed items will not have an individual MMCN number but a group managed MMCN number will be assigned to each area of the hospital to record scheduled and unscheduled services on group managed items within each area.

c. The performance of scheduled services will be recorded using the authorized maintenance automation system (see TB MED 750-2, Appendix E) generated scheduled service listing. Base dates for areas may be changed to adjust the workload or to have the services scheduled when desired. Priorities, scheduled service requirements and performance times must be reviewed periodically.

d. When an individual piece of equipment is transferred from one area to another, the scheduled service base dates must be changed to the base date of then new location. This action should be initiated upon notification from the property book officer or unit supply, that a piece of equipment has been moved.

e. Scheduled services performed that are not on the authorized maintenance automation system (see TB MED 750-2, Appendix E) scheduled service listing must be recorded using the unscheduled work order transactions as appropriate (i.e. PM, CL, ST).

f. Scheduled services accomplished as a portion of a repair will not be recorded as separate actions. All actions necessary to restore defective equipment to a fully mission capable status are considered part of the repair, to include electrical safety and any required calibration/verification. Total man-hours expended for all actions performed will be included in the repair total.

g. The NCOIC will ensure that copies of the latest authorized maintenance automation system (see TB MED 750-2, Appendix E) outputs applicable to maintenance management are on hand and available to all maintenance personnel. The equipment density listing should be manually updated as changes occur (i.e. additions, deletions, MMCN, serial number, model number, etc.).

h. The automated work order register will be reconciled at least monthly. All work orders listed on the register must be accounted for, those work orders on hand and not on the register must be entered into the system. Work orders on the register that are not located must be researched and the appropriate action taken.

i. When items of medical equipment due scheduled services cannot be located, a reasonable effort should be made to locate the item, but excessive time should not be spent locating the item. If the equipment operator/user is unable to locate the equipment, the required scheduled service will be closed out and identified as not being located.

j. The NCOIC must ensure that the scheduled services are completed in a timely manner and entered into the authorized maintenance automation system (see TB MED 750-2, Appendix E) data base.

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

6-5. Maintenance Request (work order)

a. All maintenance requests (work order) once processed in authorized maintenance automation system (see TB MED 750-2, Appendix E) , will be controlled by the NCOIC. The NCOIC will assign each work order to a technician in order of priority.

b. Maintenance requests will be filed in priority sequence by work order number and issued to a technician in the same order. Once a work order is assigned to a technician, the NCOIC will ensure the work is started in a timely manner.

c. Upon completion of repair the technician will return the work order to the NCOIC for review and close out on the work order register. The NCOIC or senior technician must inspect the completed work and initial in the inspected block of the Work order.

d. Once completed and processed, the work order will be placed in the awaiting pick up file. The equipment will be placed in the designated area for equipment pick up. The NCOIC will call the section NCOIC to inform them that the equipment is ready to be picked up.

e. Work orders that require parts to be ordered will be handled in the following manner:

(1)The work order with DA Form 3161 for required parts will be submitted to the NCOIC.

(2)The NCOIC will verify parts request and priority of requisition. The requisition will then be ordered through the appropriate class of supply and work order status updated on authorized maintenance automation system (see TB MED 750-2, Appendix E) to indicate that the work order is awaiting parts.

(3)Once completely processed, the work order and attached DA Form 3161 will be filed in the awaiting parts file in priority and work order sequence.

(4)Upon receipt of requested parts, the work order will be placed in the parts received file. The NCOIC will issue the parts and work order to the technician who ordered the parts.

(5)Once the parts are installed and the work order has been completed, the work order will be given to the NCOIC for processing. The NCOIC will ensure that the work order is closed out in authorized maintenance automation system (see TB MED 750-2, Appendix E) and all costs posted to the maintenance history for the repaired item. The work order will be placed in the awaiting pick up file and the owner will be notified. The equipment will be placed in the designated awaiting pick up area.

6-6. Modification and Alteration of Medical Equipment

a. Modification and alteration of medical equipment will only be performed when directed by USAMMA.

b. Suggested modifications should be forwarded directly to USAMMA and will not be implemented until the suggestion has been approved.

6-7. Test, Measurement, and Diagnostic Equipment (TMDE)

a. The NCOIC or designated representative in the medical maintenance section will ensure that TMDE used in the repair and calibration of medical equipment is calibrated at the proper interval.

b. Calibration requirements for TMDE are listed in TB 43-180. The unit TMDE coordinator will notify the section when an item is due for calibration. The item will be submitted on AMXTM Form 34A to the local TMDE Support Center.

c. Medical specialty TMDE that is not supported by the local TMDE Support Center must be sent to the DEPMEDS TMDE Support Lab at Tracy Depot. These items include patient simulators, defibrillator analyzers, electrical safety analyzers, electrosurgical analyzers and any other medical TMDE that cannot be calibrated locally.

d. TMDE that is submitted for calibration or repair must be clean and complete with all accessories and cables etc. that are required to perform calibration of the equipment. TMs or manufacturers literature will also be submitted with each item and documented on the Form 34A as being turned in with the equipment along with any accessories.

e. TMDE that does not require calibration must have a DA Label 80 attached with the letters "CNR" stamped on the label identifying them as TMDE that does not require calibration.

6-8. Maintenance of Support Equipment

a. Maintenance of support equipment is essential to the readiness of the Medical Maintenance Section. The primary items of equipment are the medical maintenance ISO shelter and the Environmental Control Unit (ECU).

b. Maintenance on the ISO shelter will be performed on a monthly basis. A monthly DA Form 2404 will be completed and PMCS performed IAW the technical manual. The DA Form 2404 will indicate all deficiencies noted with part numbers and document numbers listed for parts that are needed.

c. Operator Maintenance of the ECU will be performed on a weekly basis. A weekly DA Form 2404 will be completed IAW the technical manual and will list all needed repair parts and document numbers that are needed. The DA Form 2404 will be submitted to the motor pool upon completion of the weekly PMCS. Repair part status will be requested and updated on a weekly basis. Assistance will be provided to the utilities section when the equipment is due for scheduled services.

d. A copy of each DA Form 2404 will be filed in the medical maintenance section for all support equipment. An individual file will be maintained for each item.

e. For man-hour accounting purposes, time will be carried as productive indirect time.

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

Section VII Technical Inspections (TI) on Medical Equipment

7-1 Types of Technical Inspections

- a. TI for Issue. This is an inspection of newly procured equipment prior to issue. Equipment will be inspected for:
 - (1) Appearance (external damage).
 - (2) Completeness (accessories, manuals, etc.).
 - (3) Internal condition (damage, leaks, broken parts, etc.).
 - (4) Proper performance.
- b. Part of the TI for issue is to complete all manual and automated maintenance records on maintenance significant items. Non-technical or non-maintenance significant medical equipment must also receive a technical inspection, but do not require maintenance records.
- c. Information as to the recipient or hand receipt holder for the equipment must be provided by unit supply or the PBO. The equipment hand receipt holder and the location must be provided prior to the equipment leaving the shop. This is necessary to ensure maintenance records accurately reflect equipment location and proper base date to receive scheduled services.
- d. TI for turn in. This is an inspection of medical equipment, maintenance significant or non-maintenance significant that is excess.
- e. The TI for turn in work order must come from the PBO. If the equipment is maintenance significant with an admin number, all maintenance records must be closed out as part of the TI.
- f. All equipment that receives a TI for turn in must be tagged with a DD Form 1577 (Material Condition Code Tag) prior to being returned to the PBO.

7-2. Condition Coding of Medical Equipment

- a. Upon performing a technical inspection for turn in on a piece of medical equipment, a supply condition code must be determined. The following supply condition codes will be used when condition coding medical equipment:
 - (1) Code "A" Serviceable medical equipment with over 6 months remaining life expectancy.
 - (2) Code "B" Serviceable medical equipment which has reached or exceeded its life expectancy.
 - (3) Code "F" Unserviceable, economically repairable medical equipment.
 - (4) Code "H" Unserviceable, uneconomically repairable medical equipment which does not meet the repair criteria; i.e. exceeding the Maintenance Expenditure Limit (MEL).
- b. To assist in assignment of condition codes, a Maintenance Expenditure Limit graph is located in TB MED 7.
- c. Condition coding is not required by the technician for repair services. However, if in the process of the inspection and evaluation of the equipment, it is determined that repair costs will exceed the MEL, then a supply condition code "H" will be assigned. Additionally, the following actions are required:
 - (1) The technician will annotate on a work order the following:
 - (a) Estimated parts and parts cost to return the equipment to a serviceable condition.
 - (b) Estimated man-hours to complete the repair.
 - (c) A supply condition code.
 - (2) The senior maintenance manager will:
 - (a) Verify and authenticate the condition code assigned by the technician by placing his or her signature on the work order.
 - (b) Notify the hand receipt holder by memorandum.
 - (c) Attach a copy of the maintenance history and work order to the memorandum.
 - (d) Filed a copy of the memorandum in a suspense file pending decision on the waiver.
 - (3) The hand receipt holder will:
 - (a) Consult with the maintenance NCOIC or OIC and unit supply/PBO.
 - (b) Prepare an endorsement if a waiver is desired to the hospital commander and provide the necessary justification, i.e. equipment is essential to the unit readiness or mission.
 - (c) Return the memorandum to medical maintenance if the equipment is not to be repaired indicating such. Upon receipt of the memorandum, the equipment will be returned to the hand receipt holder. The hand receipt holder will then notify unit supply or the PBO.
 - (d) Prepare an endorsement if a waiver is desired to the hospital commander and provide the necessary justification, i.e. equipment is essential to the unit readiness or mission.
 - (4) The PBO will:
 - (a) Prepare turn in documents when disposal action is required.
 - (b) Arrange for pick-up and transportation of equipment to DRMO.
 - (c) Make appropriate adjustments to the hand receipt and property book.
 - (5) The commander will endorse the memorandum back thru the hand receipt holder to medical maintenance indicating approval or disapproval.
 - (6) Upon receipt of an approved waiver, the medical maintenance section will complete the repairs necessary and attach the approved waiver to the work order.
 - (7) The medical maintenance OIC must sign all work orders for condition coded equipment.

-signed-
Chief, Medical Maintenance

Figure L-1. Sample CSH Medical Maintenance Internal SOP. (Continued)

TB MED 750-2

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Appendix M

Sample Combat Support Hospital External Standing Operating Procedures

M-1. Structured maintenance support program

- a. Unit commanders are responsible to establish and maintain structured medical maintenance support programs.
- b. The program should by design enhance the unit's mission capability in accordance with the readiness objectives as defined by AR 700-138.

M-2. Commanders at all levels:

- a. Provide leadership, technical supervision, and management control of materiel maintenance programs.
- b. Establish standing operating procedures for performing maintenance operations.
- c. Emphasize the importance of safety and maintenance and ensure that subordinates are held accountable for the conduct of maintenance operations.

M-3. Standing operating procedures

- a. Standing operating procedure should consist of two parts, an internal SOP to standardize internal shop operations and an external SOP (sometimes referred to as a customer assistance manual) addressing standard procedures for the customer to receive medical maintenance support.
- b. Figure M-1 is a sample Combat Support Hospital (CSH) medical maintenance external SOP.

**COMBAT SUPPORT HOSPITAL
MEDICAL MAINTENANCE BRANCH
CUSTOMER ASSISTANCE MANUAL (External SOP)**

1. Purpose. This SOP supplements the instructions contained in AR 40-61, AR 750-1 and TB MED 750-2 detailing procedures to be followed in completing equipment maintenance and prescribes disposition. It further provides guidance to clinical staff in proper operator level preventive maintenance, scheduled services, and established general maintenance policies and responsibilities.
2. Scope. The procedures outlined herein are applicable to all personnel assigned or attached to the Combat Support Hospital.
3. Responsibilities. The Medical Maintenance Branch is responsible for the installation, repair, and preventive maintenance and calibration procedures necessary to ensure proper functioning of all medical and dental equipment used in the Combat Support Hospital.
4. Manual Review. All personnel will review this Customer Assistance SOP within 30 working days after reporting for duty and annually thereafter. Upon completion of this review, individuals will print their name, date and initial the cover sheet designated for this purpose.
5. Detailed Information. Instruction on the various policies, are contained in the enclosed example memorandums.
6. The point of contact for the manual is the undersigned at (123) 456-7890.

Super Warrant Officer
CW2, Medical Service
Chief, Medical Maintenance Branch

Figure M-1. Sample CSH Medical Maintenance External SOP.

TB MED 750-2

1. Purpose

To provide medical equipment management guidance to clinical staff within the organization and non-organizational medical elements requiring maintenance support or assistance from the Combat Support Hospital.

2. Scope

These procedures are applicable to all sections or activities requesting maintenance service from the CSH Medical Maintenance Branch.

3. Mission

To ensure all medical equipment belonging to the Combat Support Hospital is maintained in a fully mission capable status. The Medical Maintenance Branch will provide unit level medical equipment maintenance services for all sections within the organization. The following table depicts the different Materiel and Equipment Sets associated with a MRI configured Corps Combat Support Hospital.

08945A COMBAT SUPPORT HOSPITAL CORPS (MRI)											
08960A 84 Bed Company						08948AB 164 Bed Company					
08547AA Early Entry Hosp											
PAR	LIN	ERC	SET	SET TITLE	QTY	PAR	LIN	ERC	UAC	NOMENCLATURE	QTY
305	M23673	B	249	MES CHEM AGENT/2000	2	204	M25865	B	258	MES CHEM AGENTS PATIENT DECON	2
305	M25865	B	258	MES CHEM PATIENT/2000	1	204	M23673	B	249	MES CHEM AGENT PATIENT TRTMNT	3
305	M72084	A	M523	MMS MED MNT 84 BED CO	1	204	M72152	A	M725	MMS MED MAINT; 164 BED	1
306	M73050	P	M308	MMS TRIEMT PREOPDEP/M	1	204	M14585	A	M783	MMS MED SUP; 164 BED	1
307	M08417	P	M302	MMS CENTRAL MAT SER/M	1	205	M73050	P	M308	MMS TRIAGE/EMERGENCY/PRE-OP	1
307	M13428	A	M542	MMS CMS SP AUG 84 BED	1	206	M72936	P	M301	MMS OR	2
307	M72936	P	M301	MMS OP ROOM DEPMEDS/M	1	206	M08417	P	M302	MMS CMS	2
310	M09576	P	M309	MMS POST-OP ICU DEP/M	2	206	M32074	A	M417	MMS ORTHO SURG AUG	1
312	M08599	A	M310	MMS INTMDCARE WDDEP/M	1	206	M08951	A	M742	MMS CMS AUG: 164 BED	1
313	M73254	A	M506	MMS PHARMACY 84 BED	1	208	M72050	A	M312	MMS PT/OT	1
314	M73482	A	M503	MMS LAB (GEN) 84 BED	1	208	M31824	A	M316	MMS OB-GYN	1
314	M73732	A	M504	MMS LAB (LIQ BLD) 84B	1	208	M72868	A	M314	MMS ORTHO CAST	1
315	M73175	A	M334	MMS XRAY LOWCAP DEP/M	1	208	M72355	A	M713	MMS MED SVC; 164 BED	1
315	M86675	P	M305	MMS XRAY DEPMED/M	1	209	D43882	A	M374	DENTL MTL SET DENTAL X-RAY	1
08547AB 40 BED AUGMENTATION											
PAR	LIN	ERC	SET	SET TITLE	QTY	209 <th>D65926 <th>A <th>M370 <th>DENTL MTL SET GEN DENT</th> <th>1</th> </th></th></th>	D65926 <th>A <th>M370 <th>DENTL MTL SET GEN DENT</th> <th>1</th> </th></th>	A <th>M370 <th>DENTL MTL SET GEN DENT</th> <th>1</th> </th>	M370 <th>DENTL MTL SET GEN DENT</th> <th>1</th>	DENTL MTL SET GEN DENT	1
317	M14517	A	M583	MMS MED SUP: 84 BED	1	209	D43836	A	M476	DENTAL MTL SET DENTAL HYG	1
318	M72868	A	M314	MMS ORTHO CAST CLINIC	1	211	M09576	P	M309	MMS POST-OP/ICU WARD	2
318	M72423	A	M513	MMS MEDICAL SVC CLINIC: 84 BED	1	212	M08599	A	M310	MMS INTERMED CARE WARD	7
318	M31824	A	M316	MMS OB-GYN CLINIC	1	213	M73186	A	M706	MMS PHARMACY: 164 BED	1
319	M08599	A	M310	MMS INTERMEDIATE CARE WARD	2	214	M13275	A	M703	MMS LAB (GENERAL): 164 BED	1
						214	M08849	A	M704	MMS LAB (LIQ BLD BNK): 164 BED	1
						215	M73175	A	M334	MMS X-RAY LOW CAP PORT	1
						215	M72300	P	M307	MMS X-RAY	1

4. References

- a. AR 40-61 Medical Logistics Policies and Procedures
- b. AR 220-1 Unit Status Reporting
- c. AR 700-138 Army Logistics Readiness and Sustainability
- d. AR 710-2 Inventory Management Supply Policy Below the Wholesale Level
- e. AR 725-50 Requisitioning, Receipt, and Issue System
- f. AR 750-1 Army Materiel Maintenance Policy and Retail Maintenance Operations
- g. DA PAM 710-2-1 Using Unit Supply Systems (Manual Procedures)
- h. TB 38-750-2 Maintenance Management Procedures for Medical Equipment (Forms)
- i. TB MED 750-2 Medical Maintenance for MTOE Units

5. Location and points of contact.

- a. Medical Maintenance is located in BLDG 1234, Productivity Lane, Fort Getitdone, NY.
- b. Points of Contact
 - (1) OIC: CW2 Super Warrant, warrants@garrison.army.mil, (123) 456-7890
 - (2) NCOIC: SSG Tough Stuff, stufft@garrison.army.mil, (123) 456-6789
 - (3) 68A, MER Technician: SPC Fred G. All
 - (4) 68A, MER Technician: SPC Jane D. Snuffy
 - (5) 68A, MER Technician: SPC Joe P. Brain
- c. Maintenance Shop Telephone Numbers: Commercial (123) 456-7890/6789; DSN: 444; FAX: 5678

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)

6. Hours of operation.

Garrison hours for medical equipment maintenance are:

Monday	0900-1700
Tuesday	0900-1700
Wednesday	0900-1700
Thursday	1300-1700
Friday	0900-1700

7. Available equipment services.

- a. Technical Inspections (TI) for issue of new equipment
- b. Scheduled Services for Medical Equipment
- c. Remedial Maintenance and Repairs for Medical Equipment
- d. Technical Inspections (TI) for turn-in of old equipment
- e. Special Services (SS)
 - (1) Training on Set-up and Use of Medical Equipment
 - (2) Staff Assistance Visits (SAVs)
 - (3) Waiver of Maintenance Expenditure Limit (MEL)

8. Responsibilities of Unit Commanders, Sub-Hand Receipt Holders, and Clinical Staff.

a. Delegation of Authority Cards (Signature Cards): Unit commanders must provide a copy of their Assumption of Command orders to the Medical Maintenance Branch. Unit Commanders must ensure that all sub-hand receipt holders of medical equipment provide a completed DA Form 1687, Notice of Delegation of Authority or (Signature Card). The Delegation of Authority card establishes authorized chain of custody for equipment submitted to and retrieved from the branch.

b. User Level Maintenance (DA Form 2404 or 5988E or Automated Form):

(1) Section NCO(s), clinical staff, and equipment operators are an integral part of the maintenance process. Operator maintenance is the keystone to an effective medical equipment maintenance program and is essential for keeping all clinical equipment in peak operating condition. Unit commanders must place sufficient emphasis and allocate adequate time for unit personnel to perform user level maintenance for medical equipment. Commanders must ensure that medical equipment maintenance is included in the unit's training schedule. Section NCO(s) and Clinical Staff must ensure proper maintenance is performed on a regular basis. Use DA Form 2404 or DA Form 5988E to record medical equipment deficiencies identified during operator/user level maintenance.

(2) Medical equipment operators must perform routine inspections to ensure that equipment is ready for use and reliable for its intended mission. Operator maintenance includes:

- (a) Cleaning exterior surfaces and accessories;
- (b) Accountability of operator manuals;
- (c) Confirming accessories and supplies for equipment operation are available and functioning;
- (d) Inspecting, oiling or lubricating moving parts;
- (e) Replacing blown light bulbs and minor accessories;
- (f) Replacing worn rubber tubing or broken bottles;
- (g) Seeking help from the medical maintenance branch for medical equipment problems that exceed user level maintenance authority.

exceed user level maintenance authority.

Note: *While directing operator maintenance, supervisors and staff need to beware of the clinic handyman (every clinic has one!). Only trained medical equipment repairers are authorized to perform repairs that involve taking the equipment apart.*

(3) Operator/user replaceable parts. The operator's manual or technical manual should clarify operator's maintenance tasks. Generally, easily accessible components, accessories, and parts that don't require tools, test equipment or complex technical skills should be taken care of by the operator.

c. Training: It is the senior persons' responsibility to ensure that equipment operators are trained on the use of equipment in their section. Ward masters and/or section supervisors must always be aware of the following:

(1) Availability of operator's manuals and TM(s) for reference. If an operator's manual is missing, contact the equipment manufacturer to order the appropriate manual. If there are any questions or concerns about the proper version or issue of the manual, contact medical maintenance for assistance.

(2) Are operators trained to use the equipment? Ensure all operators are familiar with all equipment they may be required to use during patient care. The section NCO, clinical staff expert, or most experienced member of the section should train them as soon as possible. The Medical Maintenance Branch is available to assist with training on the proper operation of medical equipment items; this however does not include the clinical or diagnostic application of the equipment. Please provide a written request for equipment training well in advance so that medical maintenance staff (68As) may program training time into the training schedule and prepare to provide you with quality training.

d. Equipment storage and use: Equipment must be stored in a manner that prolongs its life and allows for safe retrieval, use, and/or shipment of all components or accessories at any given time. It is essential that when medical equipment is needed to save a soldier's life that all required components, accessories, and consumables are readily available. If your area has more than one make and model of the same equipment, keep the accessories separated and labeled. Using the wrong parts or accessories can result in equipment damage and/or patient injury.

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)

It is the clinic's or section's responsibility to ensure the correct types and quantities of supplies are readily available. *Please consult the Company Supply NCO for initial supply and re-supply procedures. (This is covered in the unit's Command Supply Discipline Program)*

e. Life cycle management: The Medical Maintenance Branch will continue to support medical equipment as long as the means to repair the equipment are available. Periodically, medical equipment manufacturers discontinue product lines and eventually the availability of repair parts and accessories from the manufacturer cease to exist. If your medical equipment can't be repaired by our branch and we are unable to coordinate maintenance support through either DS/GS maintenance or USAMMA's depot level maintenance activities, it may be necessary to condition code (Code "H") your equipment and recommend replacement. Should this happen, the unit commander and hand receipt holder will be notified by memorandum of the branch's recommendations. *Once a condition Code "H" is given to equipment, it is up to the hand receipt holder, unit commander, and BN S-4 to arrange for replacing the equipment with a new one.*

f. Remember: When medical equipment requires repair, make sure a maintenance request is initiated and broken equipment is taken to the medical maintenance branch in a timely manner. We can't repair something if we don't know it's broken.

9. Organization maintenance procedures overview.

a. TI for equipment Issue - New equipment requiring a TI for issue must have a maintenance request as well as a completed DA Form 3161, IAW DA PAM 710-2-1. The DA Form 3161 will let maintenance staff know which official hand receipt holder and to which section the equipment belongs allowing for inclusion of the item in the scheduled maintenance program.

b. Scheduled Services

(1) As the title depicts, scheduled services will be managed and performed on a scheduled basis. The purpose of routinely scheduling maintenance services is to preclude equipment failures that may be costly, both in resources and at the expense of the patient. Scheduled maintenance will be performed during the month it is scheduled. The following scheduled services schedule by month table lists the areas to be serviced by month. The Annual Scheduled Services Summary Report is published and reviewed with unit commanders for inclusion in the training schedule.

08960A 84 Bed Company					
08547AA Early Entry Hosp					
LIN	SET	SET TITLE	MONTH	MONTH2	POC
M23673	249	MES CHEM AGENT/2000	Jan		SSG Sarin
M23673	249	MES CHEM AGENT/2000	Jan		SSG Mustard
M25865	258	MES CHEM PATIENT/2000	Jan		SSG Compound
M73050	M308	MMS TRIEMT PREOPDEP/M	Apr		SSG Prepare
M08417	M302	MMS CENTRAL MAT SER/M	Oct		SSG Sterile
M13428	M542	MMS CMS SP AUG 84 BED	Oct		SSG Sanitary
M72936	M301	MMS OP ROOM DEPMEDS/M	Feb	Aug	SSG Cutter
M09576	M309	MMS POST-OP ICU DEP/M	Mar	Sep	SSG Healer
M09576	M309	MMS POST-OP ICU DEP/M	May	Nov	SSG Helping
M08599	M310	MMS INTMDCARE WDDEP/M	Jun		SSG Hurtone
M73254	M506	MMS PHARMACY 84 BED	Oct		SSG Quaalude
M73482	M503	MMS LAB (GEN) 84 BED	Jun		SSG Protein
M73732	M504	MMS LAB (LIQ BLD) 84B	Jun		SSG Hemophilic
M73175	M334	MMS XRAY LOWCAP DEP/M	Apr	Oct	SSG Roentgen
M86675	M305	MMS XRAY DEPMED/M	Apr	Oct	SSG Emission
08547AB 40 BED AUGMENTATION					
LIN	SET	SET TITLE	MONTH	MONTH2	POC
M14517	M583	MMS MED SUP: 84 BED	Oct		SSG Procure
M72868	M314	MMS ORTHO CAST CLINIC	Jul		SSG Bone
M72423	M513	MMS MEDICAL SVC CLINIC: 84 BED	Jul		SSG Bender
M31824	M316	MMS OB-GYN CLINIC	Jan		SSG Childs
M08599	M310	MMS INTERMEDIATE CARE WARD	Jan		SSG Heart
M08599	M310	MMS INTERMEDIATE CARE WARD	Jul		SSG Raitt

Scheduled Services Schedule By Month Table

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)

(2) Preventive Maintenance Checks and Services (PMCS) will be performed IAW equipment TM(s) or manufacturer literature. Scheduled Services include the following types of inspections:

- (a) Preventive Maintenance Checks and Services, (PM)
- (b) Electrical Safety Test, (ST)
- (c) Calibrations or Calibration Verification and Certification (CVC)

(3) The medical maintenance branch will notify unit commanders and section supervisors of upcoming scheduled maintenance requirements during maintenance meetings one month prior to the month their services are scheduled. If after the 1st week, availability of the equipment is not determined or provided for scheduled services by the hand receipt holder or designated representative, a memorandum with a list of all equipment not available for service will be sent to the appropriate hand receipt holder and company commander, notifying the responsible parties that services are due and that the equipment is considered misplaced or not located if it's not made available.

(4) Hand receipt holders are suspended by the 15th of the month services are due to make the equipment available to the medical maintenance personnel. Every effort should be made to comply. A written explanation must be provided to the Chief, Medical Maintenance Branch if there are extenuating circumstances for which the suspense cannot be met. After the suspense period, the company commander, BN S4 and CSH Executive Officer will be informed so that appropriate administrative actions may be initiated IAW AR 735-5. At this point the hand receipt holder has had 45 days fair notification to determine the equipments location and make the equipment available for scheduled services. Records will be appropriately documented to annotate historical patterns of failure to comply and inconsistencies in property maintenance and accountability. The action code "NL" will be documented to the maintenance history for not located equipment.

(5) When scheduled services are completed the department/section staff will be provided copies of documentation identifying the extent of services performed and the status of their equipment. A copy of all documentation will be retained on file in the Medical Maintenance Branch.

(6) In accordance with the FORSCOM Hospital Optimization Standardization Program (HOSP) the 164 Bed Company, TOE 08948AB, of the Combat Support Hospital has been located to Sierra Army Depot for storage until required to be deployed. Maintenance of the 164 Bed Co will be conducted on an annual basis during the month designated by FORSCOM.

c. **Unscheduled Service or Repairs, (RE)**

(1) Equipment requiring remedial repair will be reported to the medical maintenance branch as soon as the equipment is determined to be in the state of disrepair.

(2) The clinical staff is responsible for ensuring equipment is cleaned and disinfected before submitting a maintenance request for repair or service. Equipment not meeting cleanliness standards may not be accepted.

(3) Unscheduled work requests will be assigned a work order number and the receipt copy of the work order will be returned to the section NCO or delegated representative. The receipt copy of the work order is the property accountability document for portable equipment brought to the medical maintenance shop and must be surrendered when the equipment is picked up. If the receipt copy is lost, a memorandum from the hand receipt holder or delegated representative is required prior to picking up the equipment.

(4) When the maintenance service is completed, a copy of the work order will be provided documenting the extent of services performed and the status of the equipment. Retain this in your section's files for 1 year.

d. **TIs for equipment turn-in.** Medical equipment that is excess, being replaced, or determined to be no longer required must be technically inspected by medical maintenance personnel to determine the proper condition code prior to being turned in through the supply system. In order to properly evaluate the serviceability and condition of the equipment, all components and accessories (i.e. kits, cables, transducers, battery packs, manufacturer's literature, etc.) needed to operate the equipment are will be required to be included when submitted to maintenance.

e. **Special Services (SS)**

- (1) TI for Re-issue or Lateral Transfer
- (2) Waiver of Maintenance Expenditure Limit (MEL)
- (3) Staff Assistance Visits SAV(s)

f. **Equipment Evacuated for Sustainment (DS/GS) Support.** Unserviceable but economically repairable equipment beyond our capabilities may need to be evacuated to the next higher level of maintenance. The U.S. Army Medical Materiel and Research Command has four depot level operations that also function as regional medical equipment maintenance management cells. When support coordination is necessary, maintenance will contact the regional manager associated with our support region to determine the best available support. Dental hand pieces, microscopes, x-ray tubes and high tension cables will automatically be sent to the appropriate Maintenance Operation Division (MOD) for repair and return. Un-economically repairable equipment will be condition coded IAW AR 725-50.

g. **Staff Assistance Visits.** The medical maintenance branch is available to provide SAV upon the sections request. It is in the best interest of the organization to ensure leadership personnel are familiar with maintenance policies and procedures. Please notify the medical maintenance branch so the appropriate time and resources may be scheduled.

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)

10. Medical standby equipment program (MEDSTEP).
 - a. To assist in preserving the availability of critical medical equipment, the AMEDD has established a Medical Standby Equipment Program. The program involves positioning end items, components, assemblies, and sub-assemblies with deployed Sustainment (DS/GS) maintenance organizations (typically MEDLOGs) to support theater operations.
 - b. When the medical maintenance supervisor determines repair of a critical equipment item requires extensive time or resources, the medical maintenance branch, on a case-by-case bases, may coordinate to obtain MEDSTEP assets from the supporting Sustainment (DS/GS) medical maintenance organization. MEDSTEP is ordinarily DXed to reduce transportation requirements.
 - c. MEDSTEP should only be DXed for repairable medical equipment. MEDSTEP will not typically be provided for uneconomically repairable equipment, nor will it be provided to modernize a unit.
 - d. The unit's medical maintenance/logistics representative will contact the Sustainment (DS/GS) organization or depot support to confirm availability of MEDSTEP. MEDSTEP is a "supply" item for the support activities and remains on the stock record account until required by a supported unit. Once MEDSTEP is DXed, the unit must provide the DA FORM 3161 to the PBO for a serial number change. Your PBO will do the Administrative Adjustment Report (AAR) to document changes to property records and your hand receipt. Retain the DA FORM 3161 and AAR in your HR folder.

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)



DEPARTMENT OF THE ARMY
HEADQUARTERS, COMBAT SUPPORT HOSPITAL
FORT ANYWHERE, FLORIDA 12345

REPLY TO
ATTENTION OF

S: 1 October 2004

MCMR-MMM-MM

17 September 2005

MEMORANDUM THRU Commander, Medical Company
FOR NCOIC, Operating Room C (03)

SUBJECT: Notification of Scheduled Services for October 2005

1. Reference. TB MED 750-2, dated April 2005, para 6-3j, AR 40-61, dated 28 January 2005.
2. Medical equipment belonging to **Operating Room** is scheduled for services during the month of October 2004. The enclosed list of equipment requires service to verify accuracy of operation. Coordinate with the organization's Medical Maintenance Branch NCOIC by the suspense to have the equipment scheduled for services. Please plan time in your unit's training calendar for equipment services to be accomplished.
3. Prior to medical maintenance personnel attempting to perform organization level service, please ensure the following user/operator level tasks are accomplished.
 - a) **Accountability.** Ensure the serial numbers for each item matches the number on the enclosed list. All accessories that are required to operate the equipment must accompany the equipment. Coordinate with medical maintenance to ensure each item is made available for scheduled services.
 - b) **Operator Maintenance.** Perform general cleaning, function checks and operator maintenance for each item, documenting deficiencies in the section's workbook of DA Form 2404(s). Initiate a work request for equipment that requires repairs. Note any missing or broken accessories that will hinder proper equipment function.
4. The Medical Maintenance Branch personnel are available to assist with training of clinical staff on equipment set-up and capabilities if needed. Please coordinate training requirements in advance with the Chief, Medical Maintenance Branch so that training may be properly planned and executed.
5. The point of contact is the undersigned at 456-7890.

Medical Maintenance Officer/NCO
Rank, BS
Position, Medical Maintenance Branch

Encl

CF:
Commander, MED CO

Sample Scheduled Service Notification Memorandum

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)



DEPARTMENT OF THE ARMY
HEADQUARTERS, COMBAT SUPPORT HOSPITAL
FORT ANYWHERE, FLORIDA 12345

REPLY TO
ATTENTION OF

S: 1 September 2005

MCMR-MMM-MM

16 August 2005

MEMORANDUM THRU Commander, Medical Company

FOR Hand Receipt Holder for

SUBJECT: Record of Condition Code and Disposition Instructions for Medical Equipment

1. References. AR 725-50 dated 15 Nov 95 and DOD 4160.21-M Defense Disposal Manual
2. Purpose. To provide a written record of supply condition code of medical equipment and provide appropriate disposition instructions for Unit Commander, Hand Receipt Holder, and Unit Supply NCO.
3. The Medical Maintenance Branch has determined that the following medical equipment is no longer repairable and must receive a Supply Condition Code "H" designation.
LIN: M79195, NSN: 6515014235877, Nomenclature: Vital Signs Monitor
Model: 106EL, Serial Number: TB07375, Repair Cost: \$6,300.00, Replacement Cost: \$8,687.65
4. The listed equipment must be removed from the hand receipt holder's records in ULLS-S4 and turned-in to DRMO by the Unit Supply NCO. Turn-in to DRMO must take place within 120 days from the date on this memo.
5. The Medical Supply Activity must order a brand new item to replace the item that is turned-in. Once received, the new item must be placed on the hand receipt by the Unit Supply NCO, and a technical inspection for issue must be completed prior to pick-up by the section NCO for replacement.
6. The point of contact is the undersigned at 456-7890.

Medical Maintenance Officer
Rank, Medical Service
Position, Medical Maintenance Branch

CF:
S-4, Medical Logistics Officer
Company Commander, MED CO

Sample Supply Condition Code Memorandum

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)



DEPARTMENT OF THE ARMY
HEADQUARTERS, COMBAT SUPPORT HOSPITAL
FORT ANYWHERE, FLORIDA 12345

REPLY TO
ATTENTION OF

S: 1 October 2005

MCMR-MMM-MM

19 August 2005

MEMORANDUM THRU Commander, Medical Company

FOR Medical Company Platoon Sergeants

SUBJECT: Delegation of Authority Cards (DA Form 1687)

1. References. AR 710-2-1 dated 31 Oct 1997, AR 40-61 dated 28 January 2005.
2. Purpose. To provide guidance for accountability and chain of custody for non-expendable medical equipment that is delivered to and picked up from the Medical Maintenance Branch for services.
3. The Medical Maintenance Branch must have an updated delegation of authority card on file for each primary hand receipt holder of non-expendable medical equipment. The delegation of authority cards will clearly identify who is sub-hand receipted medical equipment and responsible for coordinating equipment services for each clinical section within the hospital. This responsibility is normally delegated to section supervisors and will be indicated on each DA Form 1687.
4. Regulation requires that if a hand receipt holder or sub-hand receipt holder will be away from the unit more than 30 consecutive days, a change in hand receipt holder responsibility should take place. Whenever there is a change in the primary or sub-hand receipt holder, delegation of authority cards will be updated so that the Medical Maintenance Branch can coordinate services with the appropriate points of contact.
5. Each section must provide a DA Form 1687 to the Medical Maintenance Branch by the above suspense date.

Medical Maintenance Officer
Rank, BS
Medical Maintenance Branch

CF:
CDR
XO

Sample Delegation of Authority Memorandum

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)



DEPARTMENT OF THE ARMY
HEADQUARTERS, COMBAT SUPPORT HOSPITAL
FORT ANYWHERE, FLORIDA 12345

REPLY TO
ATTENTION OF

MCMR-CSH-CDR

2 November 2006

MEMORANDUM FOR ALL CSH Personnel

SUBJECT: Medical Equipment Maintenance Program Commander's Directive

1. Purpose. To inform leaders and staff within my command of my expectations as it pertains to medical equipment readiness and the importance of ensuring that the right medical equipment is available for patient care at the right place at the right time. It is critical that all medical equipment affiliated with this medical treatment facility be maintained in a fully mission capable (FMC) status.
2. Goal. To implement an effective unit level medical equipment maintenance program that includes all medical equipment associated with this organization's healthcare mission.
3. An effective unit maintenance program includes three key elements; operator maintenance, scheduled PMCS, and remedial maintenance.
 - a. Operator maintenance is the cornerstone to an effective unit level maintenance program, hence the most critical element. Section leaders/supervisors will:
 - (1) Ensure all equipment operators/users are trained and familiar with all medical equipment with which they may come in contact while performing patient care.
 - (2) Ensure all medical equipment within their charge is accounted for and routinely inspected for operability to include verifying cleanliness, availability of all components and accessories, and proper storage conditions.
 - b. All medical equipment utilized by this CSH will be included in the medical maintenance scheduled services program. The senior medical equipment repairer will:
 - (1) Ensure all maintenance significant medical equipment is documented in the Standard Army Management Information System and has a maintenance historical record.
 - (2) Maintain schedules determining when the hospital's medical equipment is scheduled to be serviced by section/hand-receipt.
 - (3) Coordinate the performance of scheduled maintenance services IAW established maintenance schedules. Deviations from established PMCS schedules will be documented and reviewed at the monthly training briefing.
 - (4) Document performance of services and apprise the Executive Officer and the Commander of shortfalls and significant equipment accountability and maintenance issues.
 - c. All personnel will maintain a constant awareness of equipment status and ensure that any and all medical equipment utilized for patient care is appropriately serviced and functioning correctly. Any equipment that is not functioning correctly will immediately be reported to the medical maintenance branch. Medical maintenance will make every effort to effect repairs in a timely and efficient manner.
4. The point of contact is the CSM, XO or the undersigned at 456-7890.

/- Original Signed by Hospital Commander -/
HOSPITAL COMMANDER
COL, MC
Commanding

Sample Commander's Maintenance Directive Memorandum

Figure M-1. Sample CSH Medical Maintenance External SOP. (Continued)

Appendix N

Medical Standby Equipment Program

N-1. Purpose. To assist in preserving the availability of critical medical equipment, the AMEDD has established a Medical Standby Equipment Program (MEDSTEP). The program provides the capability of positioning end items, components, assemblies, and sub-assemblies with deployed sustainment maintenance organizations (typically MEDLOGs) to support theater operations.

N-2. Responsibility. The USAMMA, as the material developer, determines initial MEDSTEP assets required to support initial theater operations. Until contingency operations dictate otherwise, it is USAMMA's responsibility to maintain and account for MEDSTEP assets on the stock record account. Upon determination that a sustainment maintenance capability will be established in the AO/TO, MEDSTEP assets will be loaned to the deploying MEDLOG organizations with a sustainment medical equipment maintenance mission.

a. MEDLOG organizations loaned equipment to support the AO/TO will manage and account for the MEDSTEP assets. MEDSTEP assets will:

(1) Be maintained and accounted for on the MEDLOG activity's stock record account.

(2) Be included in the automated maintenance database as maintenance significant for scheduling and monitoring of required services.

(3) Be provided to the gaining organization on an exchange basis. *The premise of loaning MEDSTEP to forward deployed organizations only to be exchanged again at a later time while in combat is not only impractical but obtuse.*

(4) Defective medical equipment received from medical organizations as a result of an exchange will be repaired and returned to the stock record account.

(5) Initiate a DA Form 3318 (Records of Demands - Title Insert) for each MEDSTEP asset. Annotate all work request numbers in the user column of the DA Form 3318. This data will authenticate justification and required quantities for prolonged and future operations.

(6) Not typically be used to fill equipment shortages, replace uneconomically repairable items, expand operational missions, or satisfy temporary loan requirements. The AO/TO senior medical commander or MLMC commander may authorize exceptions under emergency or unique conditions.

b. Medical organizations requiring MEDSTEP assets will:

(1) Notify the supporting MEDLOG or MLMC of urgent situation equipment requirements;

(2) Exchange with supporting MEDLOG activity economically repairable medical equipment incapable of being repaired at the unit level;

(3) Account for received equipment on the activity's property book. Once MEDSTEP is DXed, the unit must provide the DA Form 3161 to the PBO for a serial number change. The PBO will perform the Administrative Adjustment Report (AAR) to document changes to property records.

c. Upon determination that a sustainment medical maintenance support capability is no longer necessary in the AO/TO, all MEDSTEP assets will be returned to USAMRMC. Contact USAMMA to determine the appropriate location for the MEDSTEP assets to be returned.

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Appendix O
Army Prepositioned Stocks

O-1. Purpose. The department of the Army has equipment assets, configured IAW specified standard requirements codes (SRC), pre-positioned in key locations throughout the world to support emergency deployment operations.

O-2. Responsibility. Medical APS equipment, although belonging to Army Materiel Command (AMC), is managed by USAMMA and maintained on an annual basis. APS ranges from entire Combat Support Hospitals to medical companies and teams.

a. The APS medical equipment, when handed off from the USAMMA Medical Logistics Support Team (MLST) to the receiving medical organization, will be in a 100% fully mission capable status.

b. The medical organization that receives APS medical equipment will ensure the equipment received is appropriately accounted for and maintained while the equipment is in their control.

c. Upon completion of contingency operations, APS equipment should be returned to USAMMA only after verification that it is 100% FMC. It is imperative that APS is maintained and ready for the next deploying medical organization.

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Glossary
Section I. Abbreviations

AMEDD
Army Medical Department

AR
Army Regulation

BS
Bench Stock

BSL
Bench Stock Level

CFR
Code of Federal Regulations

CONUS
Continental United States

COR
Contracting Officer Representative

CP
Control Period

CT
Computed Tomography

CTA
Common Table of Allowance

CVC
Calibration/Verification/Certification

DA
Department of the Army

DOD
Department of Defense

DOL
Director of Logistics

DPSC
Defense Personnel Support Center

DRMO
Defense Reutilization and Marketing Office

DS
Direct Support

EC
Environment of Care

ECRI
Emergency Care Research Institute

EO
Equipment Operator

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EPA
Environmental Protection Agency

ER
Emergency Room

FDA
Food and Drug Administration

FM
Field Manual

FY
Fiscal Year

GS
General Support

HAZCOM
Hazard Communications

HQ
Headquarters

ICU
Intensive Care Unit

IMO
Information Management Office

IMSA
Installation Medical Supply Activity

MEDCEN
Medical Center

MEDCOM
Medical Command

MEDDAC
Medical Department Activity

MEDSTEP
Medical Standby Equipment Program

MEL
Maintenance Expenditure Limit

MER
Medical Equipment Repairer

MERP
Mission Essential Repair Parts

MMPR
Monthly Maintenance Performance Report

MO
Minimum Order

MOS
Military Occupational Specialty

MTF
Medical Treatment Facility

NCDRH
National Center for Devices and Radiological Health

NCO
Noncommissioned Officer

NIST
National Institute of Standards and Technology

NFPA
National Fire Protection Association

NICAD
Nickel Cadmium

NIIN
National Item Identification Number

NMP
National Maintenance Program

NSN
National Stock Number

OEM
Original Equipment Manufacturer

OR
Operating Room

OSHA
Occupational Safety and Health Act

OST
Order and Ship Time

PAM
Pamphlet

PBO
Property Book Officer

PLL
Prescribed Load List

PMCS
Preventive Maintenance Checks and Services

PMO
Property Management Office

RCC
Recoverability Code

RMC
Regional Medical Command

RO
Requisitioning Objective

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ROP
Reorder Point

RPPF
Radiation Protection Program File

SB
Supply Bulletin

SL
Stock Level

SMDA
Safe Medical Devices Act

SOP
Standing Operating Procedure

SOW
Statement of Work

SSA
Supply Support Activity

STAMIS
Standard Army Management Information System

TAMMS
The Army Maintenance Management System

TB
Technical Bulletin

TDA
Table of Distribution and Allowance

TDY
Temporary Duty

TI
Technical Inspection

TM
Technical Manual

TMDE
Test, Measurement, and Diagnostic Equipment

UPS
Uninterruptible Power System

USACHPPM
United States Army Center for Health Promotion and Preventive Medicine

USAMMA
United States Army Medical Materiel Agency

WO
Warrant Officer

Section II. Terms

Accessories	Accessories are items which enhance or provide additional capabilities to an end item. An accessory may be expendable, durable, or nonexpendable. Whereas a component is a functional element of a set or system, an accessory is considered to be a supplementary item. A transducer for an ultrasound scanner is a component of that end item. Additional transducers, which provide additional capabilities, are considered to be accessories to the end item.
Calibration/verification/certification	The verification of the calibration of an item of equipment compared to the original manufacturer's specification using calibrated TMDE. Physical calibration is not accomplished unless the verification step indicates the system is within tolerances. The final step to every verification and/or calibration is to certify compliance by affixing a completed DD Form 2163, Medical Equipment Verification/Certification.
Equipment maintainer	Personnel trained in the repair of medical equipment. Assigned Army personnel are in MOSs 670A, 68A, and appropriate civilian repairer/engineer series.
Equipment operator	The person responsible for operating an item of medical equipment and providing before, during, and after operator maintenance. These services may consist of dusting, washing, cleaning, checking for loose or missing hardware, checking for frayed cables, and replacing operator replacement items and accessories.
Isolated input/isolated patient lead	A patient lead having a high resistance to ground or to either conductor of the equipment's power cord. If the patient lead is connected between ground or to either conductor of the power cord, the result would be current flow below a hazardous limit in the lead. Ideally the isolation would result in infinite impedance between the patient lead and ground or the power cord conductors, with no current flow when the patient lead is connected to either. On ECG's, the isolation is commonly made using an isolation transformation at a point on the apparatus where the patient cable enters the chassis but prior to making connection to any of the equipment's electrical circuits.
Maintenance supervisor	The individual assigned to the medical maintenance branch who works for the senior maintenance manager and is responsible for the day-to-day maintenance operations.
Non-technical equipment	Equipment that is usually mechanical, electromechanical, or electrical requiring only basic skills to maintain; not normally incorporating any solid state components or printed circuit boards. This equipment will not compromise or jeopardize a patient's health or well being.
Operator replacement item	Those items and accessories that do not require installation/repair by a MER. Items and accessories (hand pieces, transducers, etc.) that can be replaced by users/operators are not classified as repair parts, but user replacement items. User replacement items do not require extensive disassembly of the item, critical alignment or adjustment after replacement, or tools. Users/operators should not attempt repairs beyond those authorized as part of operating technique.

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Patient vicinity	The space, in which patients are normally cared for, with surfaces likely to be contacted by the patient or an attendant who can touch the patient. Within a patient room, the patient vicinity is considered to be 6 ft beyond the perimeter of the bed and extending vertically to 7.5 feet above the floor.
Preventive maintenance checks and services	A program of systematic care, servicing, and inspecting of equipment to maintain it in a standard serviceable condition and to detect and correct minor faults before they develop into major defects.
Repair parts	AR 40-61, AR 750-1, and this bulletin assign the responsibility of maintenance and repair of medical equipment to qualified MERs. A repair part as any part, subassembly, assembly, or component required for installation in the maintenance or repair of an end item.
Senior maintenance manager	The individual assigned to the medical maintenance branch with overall responsibility and authority for managing the medical maintenance operations for the MTF. Also may be referred to as the Maintenance Manager. In the case of this individual's absence, the person filling the position of NCO would assume responsibility.
Surveillance	A visual inspection of the equipment or its sealed storage container to determine if there is a need to perform a more in-depth operation test or technical inspection.
Technical equipment	Equipment usually requiring an increased knowledge of electronics as compared to the skill level required to maintain non-technical equipment. It is usually electronic, incorporating printed circuit boards.

Section III. Special Abbreviations and Terms

This section contains no entries.

By Order of the Secretary of the Army:

Official:


JOYCE E. MORROW
*Administrative Assistant to the
Secretary of the Army*

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

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