

**BY ORDER OF THE COMMANDER
59TH MEDICAL WING**

59TH MEDICAL WING INSTRUCTION 41-130



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Health Services

CLINICAL ENGINEERING PROGRAM

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Randall Ivall)

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This instruction implements Air Force Policy Directive 41-1, *Health Care Programs and Resources*. This instruction establishes policies and provides instructions necessary to ensure adequate and effective maintenance of all medical and dental equipment at the 59th Medical Wing (59 MDW). This instruction applies to all personnel assigned, attached, or under contract to the 59th Medical Wing. This instruction does not apply to the Air National Guard or Air Force Reserve. Refer recommended changes and questions about this publication to the Office of Primary Responsibility using the AF Form 847, *Recommendation for Change of Publication*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System Records Disposition Schedule located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed. The entire publication has been simplified: publication name, facility designation, office symbols, references and maintenance tags reference and have all been updated.

1. Responsibilities.

1.1. Commander, 59th Medical Logistics and Readiness Squadron (59 MLRS/CC) oversees the Clinical Engineering Program.

1.2. Clinical Engineering Flight (59 MLRS/SGSKM).

1.2.1. Ensures the serviceability of medical equipment located in Wilford Hall Ambulatory Surgical Center (WHASC). Provides in-house or purchased equipment inspections; initial, safety, evaluation, equipment calibration and preventive maintenance actions required to meet manufacturers' standards.

1.2.2. Performs pre-purchase technology assessment and assistance to equipment custodians in the evaluation and selection of medical equipment, and provides guidance for developing specifications and sources for equipment items being considered for procurement.

1.2.3. Provides an equipment quality assurance program that identifies and corrects equipment hazards and defects. Investigates incidents/occurrences involving medical equipment and assists in preparing Materiel Discrepancy Reports per the Safe Medical Device Act. Maintains maintenance data and documentation records in an Equipment Data File and a technical reference library that meets both regulatory and accreditation requirements per AFI 41-201, *Managing Clinical Engineering Programs*.

1.2.4. Provides initial and follow-on assistance to departments by providing in-service training on patient related equipment, as requested or when special requirements dictate.

1.2.5. Repairs parts requiring installation by a Biomedical Equipment Repair Technician (AFSC 4A2X1), which will be purchased solely by Clinical Engineering.

1.3. Equipment Owners/Using Activities.

1.3.1. Provides and documents user training on the proper operation and care of equipment. Ensures only qualified personnel operate equipment and that personnel competency is documented annually in accordance with (IAW) 59MDWI 41-218, *Electrical Safety Program*. Equipment operators/users have an inherent responsibility to ensure their competency in equipment operation before using any equipment item. If they lack training, they must inform their supervisor.

1.3.2. Makes certain that all medical equipment, regardless of ownership is checked by Clinical Engineering (292-5103) prior to use IAW AFI 41-203, *Electrical Safety in Medical Treatment Facilities*, AFI 41-201, and 59MDWI 41-218. The medical equipment, including vendor-owned, rental, leased, loaned, and user test equipment, must be properly processed IAW 59MDWI 41-218 and 59 MDWI 41-205, *User Tests of Supplies and Equipment*.

1.3.3. Performs daily visual inspections, lubrications, adjustment, cleaning, check of batteries and minor exterior repairs to finishes and components, in accordance with operator's manuals. Obtains and replaces equipment accessories, components, consumable parts and supplies (e.g. electrocardiogram (EKG) electrodes, temperature probes, suction bottles, lamps, transducers and batteries).

1.3.4. Confirms required equipment inspections (initial and safety), preventive maintenance, and calibration are accomplished before use (verification may be accomplished by checking appropriate labels for currency, see Attachment 2).

1.3.5. Reports equipment malfunctions, damage, and abnormalities to Clinical Engineering and ensures equipment requiring maintenance is properly

cleaned/disinfected prior to requesting maintenance IAW 59MDWI 44-157, *Infection Prevention and Control Program*.

1.3.6. Immediately impounds any equipment and consumables suspected of being involved in an incident. Promptly notifies Clinical Engineering when medical equipment is suspected of being involved in any incident involving injury or potential injury to patient, staff, or visitor. After normal duty hours, Clinical Engineering may be contacted through the Medical Control Center (MCC) at 292-7674. If the incident occurred between the hours of 0001 and 0500, the Clinical Engineering Flight may be reached by contacting Medical Response Center at 292-1800.

1.3.7. Maintains an accurate inventory of on-hand equipment, identifies equipment requirements by initiating request for purchase through Medical Equipment Management Office and prepares documents to turn in unneeded or replaced equipment.

1.4. Medical Equipment Management Office. Processes all requests for medical, dental and research equipment or upgrades from any source (i.e. purchase, gift, rented, trial unit or loaner item), as well as equipment receipt (gains) and loss (turn-in) actions. (See AFI 41-209, *Medical Logistics Support*, and 59MDWI 41-209, *Equipment Item Accounting*)

2. Procedures for Obtaining Maintenance Services.

2.1. Scheduled Maintenance. Routine scheduled maintenance, other than that accomplished by the operator, is scheduled by Clinical Engineering and does not require a user request. Air Force Medical Logistics Office (AFMLO)/FOE establishes minimum scheduled maintenance requirements/schedules based on equipment function, physical risk or consequence of failure and environment of use. Scheduled maintenance frequency requirements are found in the Defense Medical Logistics Standard Support (DMLSS) System.

2.2. Unscheduled Maintenance.

2.2.1. Routine and Urgent Equipment Maintenance Requests.

2.2.1.1. Transportable Equipment.

2.2.1.1.1. Deliver all "readily transportable" defective equipment to Room BM 10M (located near the Urgent Care and Basement Pharmacy) between normal workday duty hours of 0730-1045 and 1130-1545.

2.2.1.1.2. Complete an AFTO Form 350, *Repairable Item Processing Tag*. The lower portion of the AFTO Form 350, listing the noun (item description), work order number and quantity, will be given to the customer as means of maintaining equipment accountability pending completion of repairs.

2.2.1.2. Installed medical equipment. Maintenance issues will be reported to Clinical Engineering at 292-5103. Clinical Engineering will prepare a work order and repair equipment on-site.

2.2.2. Emergency Equipment Repairs and Incidents involving medical equipment.

2.2.2.1. Normal duty hours. Report emergency repair of medical equipment to Clinical Engineering by calling 292-5103.

2.2.2.2. After hours. Report emergency repair of medical equipment by notifying the MCC at 292-7674 or 292-5990.

2.2.3. Equipment Modification.

2.2.3.1. AFMLO and manufacturer directed. Service does not normally require a request by the user or department. Modification will be scheduled and accomplished by Clinical Engineering.

2.2.3.2. User requested. The customer will submit a letter signed by their appropriate group commander to the 59 MLRS/CC who will route it to the 59th Medical Wing Commander, or designee for approval. The request must include a complete justification, drawings and essential purpose to be served.

2.2.3.2.1. Approved requests will be routed to Clinical Engineering who will provide a list of materials required for the requestor to purchase. Upon receipt of needed materials, Clinical Engineering performs the modification.

2.2.3.2.2. Disapproved requests will be returned, through the appropriate group commander, to the initiating requestor.

GLENN A. YAP, Colonel, USAF, MSC
Administrator, 59th Medical Wing

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 41-1, *Health Care Programs and Resources*, 15 April 1994

AFI 41-201, *Managing Clinical Engineering Programs*, 25 March 2003

AFI 41-209, *Medical Logistics Support*, 30 June 2006

AFMAN 41-216, *Defense Medical Logistics Standard Support (DMLSS) Users Manual*, 31 August 2008

AFI 41-203, *Electrical Safety in Medical Treatment Facilities*, 19 June 2002

59MDWI 41-205, *User Tests of Supplies and Equipment*, 19 August 2009

59MDWI 41-209, *Equipment Item Accounting*, 16 April 2008

59MDWI 41-217, *Use of Wireless Communication Devices*, 6 December 2010

59MDWI 41-218, *Electrical Safety Program*, 13 December 2010

59MDWI 44-157, *Infection Prevention and Control Program*, 13 December 2010

American Hospital Association's *Maintenance Management for Medical Equipment Manual*, 1996

T.O. 33K-1-100-1, *Calibration Procedure for TMDE Calibration Notes, Maintenance Data Collection Codes and Calibration Measurement Summaries*, 30 November 2007

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

AFTO Form 350, *Repairable Item Processing Tag*, 14 April 2011

Abbreviations and Acronyms

AFMLO—Air Force Medical Logistics Office

DMLSS—Defense Medical Logistics Standard Support

EKG—Electrocardiogram

IAW—In Accordance With

MCC—Medical Control Center

MDW—Medical Wing

TMDE—Test Measurement Diagnostic Equipment

WHASC—Wilford Hall Ambulatory Surgical Center

Terms

Accessories, Components, Repair Parts and Consumables—(1) Accessories can stand on their own to independently perform a desired function, but are used with an end item enhance the usefulness of the end item. (2) Components are parts or assemblies that cannot be used independently. They depend on an end item to function must be used in conjunction with an equipment end item (the end item is not dependent on the component to operate). (3) Repair parts defective pieces or assemblies that the end item is dependent on to operate (the Clinical Engineering Technician normally replaces such parts). (4) Consumable parts or assemblies do not affect the life or condition of the end item (e.g., EKG straps, EKG electrodes, temperature probes, suction bottles, lamps, transducers and batteries). The user installs these items.

Emergency Maintenance—Equipment presents a safety hazard, places the operator or patient in danger, or must by the most expeditious means because equipment: (1) is one of a kind and required to prevent patient suffering or death, or unacceptable delay in services, (2) places the operator in danger, (3) is utilized in an experimental capacity and by not being operable is delaying or endangering a mission or program.

Maintenance—Any action accomplished to maintain or restore equipment to a serviceable condition. This includes actions to modify or improve the capabilities of existing equipment.

Medical/Dental Equipment—Equipment that retains its identity while performing medical diagnoses and treatment.

Preventive Maintenance—Systematic servicing, and inspection of equipment to keep it safe and serviceable. It is a joint responsibility by the equipment operators and Clinical Engineering to prevent, detect and correct minor faults before they become major defects.

Routine Maintenance—Equipment usually permits continued operation without incurring additional equipment damage.

Scheduled Maintenance—Service to insure optimum performance, safe operation, minimum downtime, and maximum useful life falls into two categories: (1) preventive maintenance, and (2) calibration and certification.

Test Measurement Diagnostic Equipment (TMDE)—Tools, test and calibration equipment specifically for repair, inspection, calibration, or adjustment of equipment/systems. TMDE provides a known reference of comparison for performance measure.

Unscheduled Maintenance and Repair—Actions necessary to restore normal function, safety, performance, and reliability to malfunctioning equipment. Normally requires the services of a trained Biomedical Engineering Technician (AFSC 4A2X1). Unscheduled maintenance is divided into the following DMLSS categories.

Urgent Maintenance—Equipment is usually inoperative, but delays in making the required repairs will not cause serious damage or cause complete work stoppage in the department concerned.

Attachment 2

WHASC TAGS TO IDENTIFY EQUIPMENT AND SERVICE REQUIREMENTS

Figure A2.1. DMLLS Equipment Control Number Tag.

ECN:087719	Org ID:FM3047	
Org Name:FM3047 WILFORD HAL	Item ID:6515EE1353001AA	
Nomen:TRANSDUCER, ULTRASONIC		
SN:1835672		
		

Figure A2.2. Local Equipment Approval/Safety Tag.

ELECTRICAL SAFETY CHECK	
NON-HOSPITAL OWNED DEVICE	
<input type="checkbox"/> RENTAL	<input type="checkbox"/> LOANER
<input type="checkbox"/> EVAL	<input type="checkbox"/> OTHER
BY _____	DATE _____
Next Inspection Due _____	
UAL BE711	

A2.1. Every medical device in WHASC, regardless of ownership, must have one of the above tags attached. If you don't see one of these tags, call Clinical Engineering at 292-5103.

Figure A2.3. AFMLO Approved; WHASC Maintenance Status Tags.

CLINICAL ENGINEERING 2-5103
Sched Maint Completed Jun 2012
Next Due <u>Jun 2013</u>
CLINICAL ENGINEERING SCHEDULED MAINTENANCE NOT REQUIRED

A2.2. In addition to one of the first two tags, Figures A2.1. and A2.2., every medical equipment item in WHASC should have one of tags in Figure A2.3. attached. These tags inform you if scheduled maintenance is required, when it was last accomplished, and when it is due again.