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Biomedical Equipment Craftsman

Volume 1. Repair Shop Organization, Safety, and Requirements

Air Force Institute for Advanced Distributed Learning

Air University

Air Education and Training Command

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THE BIOMEDICAL EQUIPMENT TECHNICIAN (BMET) career field is vast and challenging. It is also a tremendously important job that must be done accurately and efficiently. As a biomedical equipment technician, you are an important link that helps to hold the chain of quality health care together. As your skill and rank increase, so will your duties and responsibilities. The medical service mission depends on you, your knowledge, and your judgment.

By attaining your 5-skill level, you completed a major step in your Air Force career. As you progress to your 7-skill level, you will be tasked with even more responsibilities, and possibly even running your own shop. This course contains two volumes, which will familiarize you with the duties and responsibilities of a BMET manager. It pulls information from numerous sources and guides you to successfully establish and manage your own BMET shop. Keep in mind that your continuing advancement in this career field will depend largely on expanding your knowledge, and much of that knowledge will come from this CDC and the sources listed within it.

In this volume, *Repair Shop Organization, Safety, and Requirements*, you will learn about the overall Air Force biomedical equipment support program and how to establish our own shop. In unit 1 you will receive an overview of the biomedical equipment support program with special emphasis placed on the more important aspects of the program and specific activities unique to your shop. In unit 2 you will learn how to determine and justify your specific shop requirements; and the importance of Data Quality. A glossary of abbreviations and acronyms used in this course is included at the end of this volume.

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This volume is valued at 6 hours and 2 points.

NOTE:

In this volume, the subject matter is divided into self-contained units. A unit menu begins each unit, identifying the lesson headings and numbers. After reading the unit menu page and unit introduction, study the section, answer the self-test questions, and compare your answers with those given at the end of the unit. Then complete the unit review exercises.

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STUDENT NOTES

Please read the unit menu for unit 1 and continue ➔

Unit 1. Support Program

BEFORE you turn to some specifics, you will take a broad look at the biomedical equipment technician (BMET) career field and where you fit into the "big picture." To do this, we will look at the organizational structure along with the objectives and responsibilities of various levels of the biomedical equipment maintenance program. Next, you'll move on to subjects such as safety, professional relations, and ethics which are vitally important to your effectiveness as a BMET. From there you will learn about determining shop requirements. We'll finish out this volume with some miscellaneous administrative items. All the items covered in this volume will be important to you as a BMET manager. So, without any further introduction, let's get started with an overview of the BMET career field.

1–1. Program Organization

As a supervisor/manager in the biomedical equipment technician career field, you need to have a working understanding of the organization. Why? Because it paints the "broad picture" and lets you know exactly where your daily duties fit into the holistic structure of providing healthcare. In addition, this understanding also gives you information about the levels of responsibility and where to turn for assistance. This section is designed to start with the "big picture," beginning with the organizational structure for the entire career field. After looking at the overall organizational structure, we will discuss responsibilities specific to the Clinical Engineering Branch. Then we'll narrow our focus to regionally assigned Medical Equipment Repair Centers. We'll end this section by briefly discussing the general responsibilities inherent to managing a local BMET shop.

001. Medical maintenance organizational structure

The organizational structure of the BMET career field has a clearly defined hierarchy. Our examination of this organizational structure will begin at the top and progress downwards to you, the local BMET.

Air Force Medical Service (AFMS)

The AFMS works in close coordination with the Assistant Secretary of Defense for Health Affairs, the Departments of the Army and Navy, MAJCOM surgeons and other government agencies to deliver medical service for more than 2.63 million eligible beneficiaries. Beneficiaries include active duty, Reserve, Guard, family members and retirees, during both peacetime and wartime. The AFMS consists of approximately 40,000 officers, enlisted and civilian personnel, plus an additional 20,000 members assigned to the Air Force Reserves and the Air National Guard. The AFMS has an annual budget of approximately $6.9 billion and runs 74 Medical Treatment Facilities (MTF) worldwide, including 24 hospitals and medical centers.

AFMS Mission

The AFMS provides seamless health service support to Air Force and combatant commanders. The AFMS assists in sustaining the performance, health and fitness of every Airman. It promotes and advocates for optimizing human performance (sustainment and enhancement) for the warfighters, including the optimal integration of human capabilities with systems. The AFMS operates and manages a worldwide healthcare system capable of responding to a full spectrum of anticipated health requirements and provides an integrated healthcare system from forward deployed locations through definitive care with an emphasis on prevention of illness and injury. It arranges for healthcare capabilities that it does not possess organically. It directly supports Air Force operations and theater aeromedical evacuation (AE) of joint and combined forces.

Air Force Surgeon General (SG)

The Air Force SG is a Lieutenant General who advises the Secretary of the Air Force and Air Force Chief of Staff, as well as the Assistant Secretary of Defense for Health Affairs on matters pertaining to the medical aspects of the air expeditionary force and the health of Air Force people. The SG has authority to commit resources worldwide for the Air Force Medical Service, to make decisions affecting the delivery of medical services, and to develop plans, programs, and procedures to support worldwide medical service missions. The SG exercises direction, guidance, and technical management of more than 42,400 people assigned to 74 medical facilities worldwide.

Field Operating Agencies (FOA)

There are two FOAs that directly impact the operations of the BMET career field. These agencies offer specific elements of support to BMET shops and Medical Treatment Facilities (MTF).

Air Force Medical Operations Agency (AFMOA)

AFMOA is the Air Force Medical Service operational and consultant lead for aerospace medicine, preventive medicine, clinical excellence, optimization of medical resources, bioenvironmental and occupational health, radiation protection and population health support. They support the Air Force Medical Service with the management of the health of our population. In other words, they don't actually provide the healthcare; they enable those that do.

Air Force Medical Support Agency (AFMSA)

The AFMSA oversees the execution of Air Force SG policies and programs to transform medical capabilities in support of the war fighter. It leverages science, technology, and information systems to integrate modernization efforts.

AFMSA Objectives

1. Seamlessly modernize medical care to support the warfighter.
2. Lead needs determination, requirements building, technology searches and evaluations, cost assessments, and acquisition strategies to successfully transition products to the end user.
3. Promote novel, cutting-edge Research and Development to improve medical care.
4. Identify off-the-shelf products to address urgent and compelling needs in the fixed site or deployed medical setting.
5. Modernize information systems and knowledge exchange mechanisms to promote fast, efficient, safe, and secure communications enterprise wide.

Medical Logistics Chain of Command

Figure 1–1 shows how the Air Force biomedical equipment maintenance support program is organized. The Medical Logistics and Health Facilities chain of command starts with the Air Force Surgeon General (SG) and flows down through Healthcare Operations (SG3) to Medical Support (SG3S) to the Medical Logistics Division (SGSL), commonly referred to as the Air Force Medical Logistics Office (AFMLO), and Health Facilities Division (SGSF). The Medical Logistics Division is

located at Ft. Detrick, MD while the Health Facilities Division is located in Falls Church, VA. The Clinical Engineering Branch (BMET side of the house) is co-located with the Medical Logistics Division at Ft Detrick, but is assigned to the other branch of the chart under Modernization (SGR) and Management Programs and Support (SGRM).

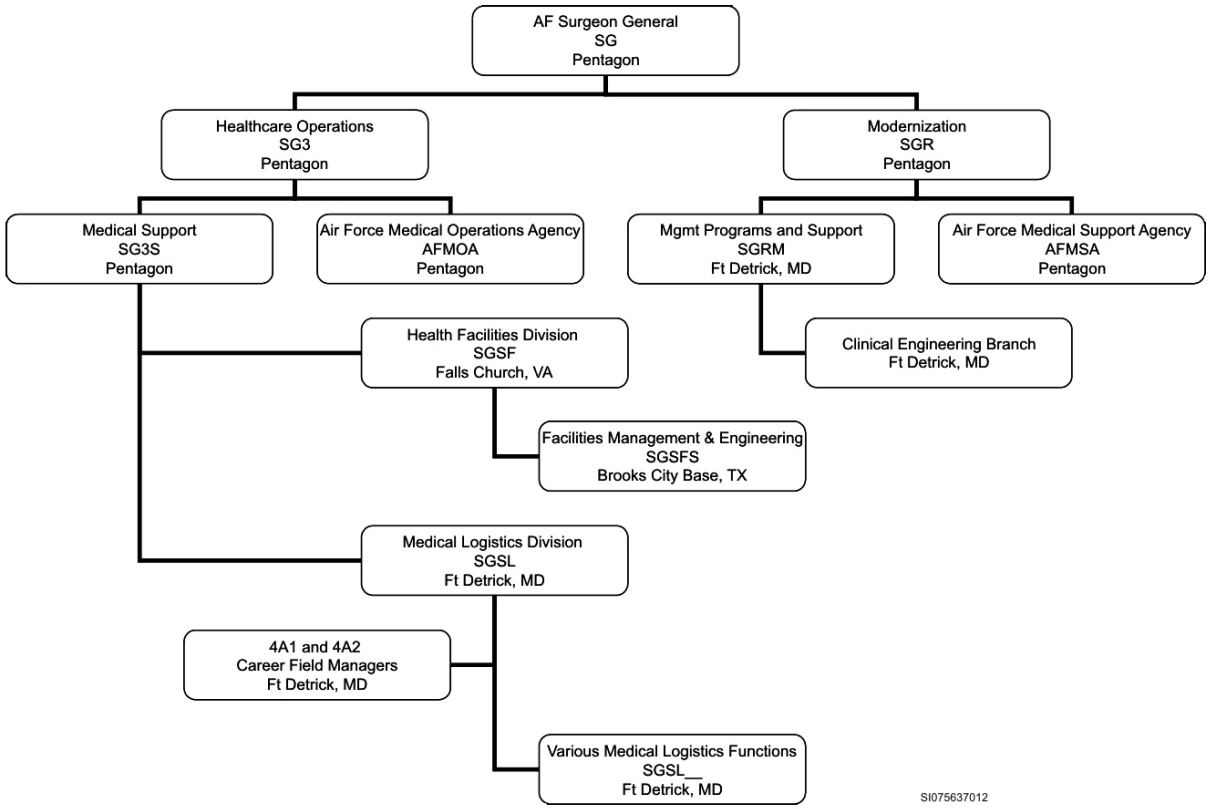

Figure 1–1. Air Force Medical Logistics Office Organizational Chart.

4A2X1 Air Force Career Field Manager (AFCFM)

The 4A2X1 AFCFM slot is filled by a CMSgt serving at the Clinical Engineering Branch in Ft Detrick, MD and is responsible for organizing and managing our career field. Figure 1–1 shows where they fit into the organization. You'll also see the AFCFM referred to as the Career Field Manager (CFM). The terms are synonymous. The 4A2X1 AFCFM serves as the primary enlisted manager for the 4A2X1 career field on matters pertaining to enlisted accession and training requirements and overall force structure of over 500 enlisted members as well as developing and managing career-long training plans' requirements and programs. This office also constructs viable career paths, evaluates training effectiveness, monitors health and manning of the career field, and provides input on personnel policies and programs. Additionally, the 4A2X1 AFCFM develops force management policies and programs, develops contingency planning policy, validates deployment requirements, and verifies workforce availability. As a functional expert, this person ensures our career field is responsive to both current and future needs of the Air Force. The Chief communicates directly with other Headquarters Air Force offices on issues impacting our career field and with his respective MAJCOM enlisted career field representatives and Air Education and Training Command Training Managers to disseminate Air Force and career field policies and program requirements. Our AFCFM operates at the strategic level of leadership.

MAJCOM Functional Managers (MFM)

Enlisted MFMs are SNCOs who manage our career field for their respective MAJCOMs and serve as the MAJCOM liaisons for our AFCFM. MFMs monitor the health and manning of our career field

within their command and elevate concerns to the 4A2X1 AFCFM. They manage command training for our career field and coordinate command training and personnel issues across their MAJCOM staff and with our AFCFM. They disseminate Air Force and career field policies and program requirements affecting BMETs throughout the MAJCOM. They coordinate with the Air Force Personnel Center to distribute personnel throughout the MAJCOM to ensure proper command prioritization of allocated/ assigned personnel resources. They provide functional and subject matter expertise to Air Education and Training Command Training Managers to develop new or modify/improve existing training programs. Enlisted MFMs operate at the strategic level of leadership.

A current list of BMET MFMs can be found on the Clinical Engineering Branch website in "The Chief's Corner." The senior BMET at your MTF should have close contact with your MFM to coordinate manning issues and advanced courses at Sheppard AFB.

002. Clinical Engineering Branch

As mentioned earlier, the Clinical Engineering Branch is one of the primary offices that BMET technicians will likely interface with directly. This lesson will familiarize you with two important teams within the Clinical Engineering Branch as well as the facility management support they provide.

Responsibilities

The Clinical Engineering Branch provides guidance, policy, and consultative services to the Air Force Surgeon General, the Air Force medical logistics community, and Air Force Biomedical Equipment Repair (4A2) personnel. It oversees the use, sustainment, and acquisition of over $1B worth of medical devices, support equipment, and test equipment. Additionally, the branch participates in numerous tri-Service panels to assist in the standardization and interoperability of medical equipment both at in-garrison and deployed locations. The Clinical Engineering Branch is the hub of the Air Force Biomedical Maintenance Program. The table below shows the major agencies and offices the Clinical Engineering Branch conducts business with on a daily basis. These agencies and offices are "considered business partners" and are not listed in any particular order. As you can see, there are a lot of pieces to the puzzle that make up the entire program.

- 4A2 Career Field Manager
- Food and Drug Administration (FDA)
- American College of Radiology (ACR)
- Emergency Care Research Institute
- National Electrical Manufacturers Association (NEMA)
- Air Force Laboratory
- Defense Medical Logistics Standard Support (DMLSS)
- Central Command Air Forces/Area of Operations (CENTAF/AOR)
- Major Command Medical Logistics (MAJCOM/SGSL)
- Defense Supply Center Philadelphia (DSCP)
- Veterans Affairs Special Services (VASS)
- Air Force Contracting Squadron (CONS)
- Air Force Medical Operations Agency (AFMOA)
- Air Force Medical Support Agency (AFMSA)
- Medical equipment manufacturers
- Surgeon General (SG) consultants
- Patient Movement Item (PMI) program
- Defense Occupational & Environmental Health Readiness System (DOEHRS)
- Army/Navy Logistics & Clinical Engineering
- Medical Equipment Repair Centers (MERCs)
- US Army Aeromedical Research Laboratory (USAARL)
- Defense Medical Standardization Board (DMSB)
- Dental Evaluation & Consultation Service

- TRICARE Management Activity (TMA)
- Health Facilities Division
- (DECS)
- Air Force Information Management/ Information Technology (all levels)

Currently, the Clinical Engineering Branch is divided into two teams: the Healthcare Technology Management (HTM) Team, and the Picture Archiving and Communication Systems (PACS) Deployment Team.

Healthcare Technology Management Team

The HTM Team is responsible for all major facets of the Clinical Engineering program within the Air Force. This includes policy and guidance, patient safety, sustainment operations, acquisition, and direct contact with our Tri-Service counterparts. The HTM Team interfaces with both in-garrison and deployed personnel on a daily basis to ensure that the level of healthcare provided to US Forces and her Allies is world class. This is the team with whom you will have most contact.

Biomedical Maintenance Program

Currently a responsibility of the HTM Team, the *primary* focus of the Biomedical Maintenance Program is to ensure the highest quality patient care and safety through the proper maintenance of medical equipment ranging from analog sphygmomanometers to the latest in digital imaging technologies. Air Force BMETs currently maintain over 200,000 equipment items valued over 1 billion dollars.

PACS Deployment Team

The AF PACS Office provides total PACS lifecycle support to all Medical Treatment Facilities. During a new installation the process includes site visits, the development of sites plans/Request for proposal (RFPs), project management and then a final acceptance test to insure the system is calibrated and clinically acceptable. This type of support includes those older sites that require upgrades or replacements of existing PACS systems due to meeting/exceeding of life expectancy or obsolescence. Another key service this office provides is the support and development of all documentation and testing for PACS vendors through the Certificate of Networthiness (CoN) process. Additional AF PACS initiatives include:

- Composite Healthcare System (CHCS) II and a bi-directional interface.
- Electronic patient records.
- Digital Imaging Network - Picture Archiving and Communications System (DIN-PACS) II and future DOD PACS Contracts.
- BMET Course Curriculum Development as it pertains to PACS and Teleradiology equipment.
- Regional Archives.
- Centralized PACS maintenance contracts.
- Membership on the PACS Joint Services Working Group.

Facility Management Support

Sometime during your career you may find yourself working with facility management, which may involve providing advice on equipment installation or actually performing some facility management functions. The facility management support system varies slightly from that of biomedical equipment maintenance support. Headquarters Air Force Medical Support Agency, Health Facilities Division (AFMSA/SGSF) maintains overall control of the facility management program and formulates policies and guidance for the Air Force medical facility program.

The Clinical Engineering Branch assists AFMSA/SGSF in formulating policy and provides procedural guidance for all areas of facility management support. Simply stated, the Clinical Engineering Branch provides guidance on how to do the day-to-day functions of facility management. This includes technical support for facility managers, communication with other agencies for facility issues, liaison with Air Force for manning, resources, civil engineering, and logistics. The *Clinical Engineering* section of the *Air Force Medical Logistics Letter* (AFMLL), written by the Clinical Engineering Branch, also addresses facility management issues and topics. Instructions governing facility management functions are also developed by the Clinical Engineering Branch.

003. Medical Equipment Repair Centers (MERC)

MERCs are consolidated maintenance activities located throughout the world, and each MERC serves bases located within their region. MERCs provide two types of maintenance support: intermediate maintenance support (on a regional basis), and organizational maintenance support (at their local MTF and at MTFs with no BMET assigned). For organizations without a BMET, MERCs dispatch maintenance teams annually to provide organizational maintenance support and to provide emergency repair services upon request. MERCs serve active duty MTFs, Air National Guard (ANG) and Air Force Reserve Command (AFRC) locations, and in some cases, units from other military services.

In addition to maintenance responsibilities, MERCs answer questions and help solve problems encountered at the facilities they support. It is important to know all of the services that your local MERC has to offer and to use these services to benefit your organization and your maintenance program. An understanding of their mission and functions is paramount to your upgrade training. MERCs are the first line of help for technical assistance and maintenance management issues for local BMET activities within a defined region. You can find a complete list of responsibilities for both MERCs and their supported bases in AFI 41–201.

MERC Intermediate Maintenance Support

MERCs typically provide intermediate maintenance support during annual visits to each MTF where a BMET is assigned. Scheduled MERC intermediate maintenance support includes performing on-site calibrations and/or quality assurance inspections of equipment Unscheduled intermediate maintenance includes engineering support and consulting services to active duty Air Force, ANG, and AFRC medical activities located in its geographical region.

On-Site Equipment Calibrations

The MERC provides on-site calibration service for:

- Audiometers.
- X-ray equipment.
    - Dental.
    - Mobile systems.
    - Radiographic/Fluoroscopic.
    - Mammography.

Audiometers *must* be calibrated every 365 days *or less*. If the MERC is unable to meet this timeline, it must notify the local facility so alternative arrangements can be coordinated. For x-ray systems that are under contract, the MERC will only perform post calibration radiation inspections (PCRI). On-site calibration will also include any equipment the local maintenance activity lacks the test equipment to perform.

Quality Assurance Inspections

The MERC performs quality assurance (QA) testing on assets classified as War Reserve Materiel (WRM), Aeromedical Evacuation (AE), and Patient Movement Item (PMI) assets. Items subject to QA inspections fall into the following equipment categories:

- Anesthesia equipment.
- Defibrillators.
- Ventilators.

Based on the experience and skill level at the MTF and at the discretion of the visiting MERC team chief, additional QA testing may be performed on items in the equipment categories below:

- Electrosurgical units.
- Electrocardiographs.
- Vital signs monitors.

For the purpose of QA testing, the MERC will test 10 percent, but not less than two devices from each equipment category listed above. For MERCs that support PMI centers, the MERC will test at least four devices from each equipment category, and these items are not to be included in the 10 percent calculation from the organization. If the MERC notes a major procedural or test equipment deficiency in any sample selected, the MERC will test 100 percent of the equipment group. If the items are on contract, the local BMET notifies the contractor of the discrepancy and requests the contractor to recalibrate the equipment.

MERC Engineering Support and Consulting Services

In addition to the services already mentioned, MERCs provide technical assistance to resolve maintenance problems beyond the capability of the local BMET. They also provide consultation and technical services in critical areas of medical instrumentation and electrical safety. They also conduct preprocurement surveys for planned complex equipment purchases when such surveys are beyond the capability of local BMETs. The MERC can install major equipment systems, such as an x-ray unit, when such services cannot be obtained by contract or when in-house BMETs cannot install the item. Acceptance inspections are also performed for contractor-installed major equipment items. Additional functions that can be accomplished by the MERC include:

- Manning assistance for short periods when in-house maintenance activities do not have enough personnel to accomplish the mission.
- Backup medical equipment maintenance support in the event of a natural disaster.
- Emergency assistance during base closure or expansion actions.
- Assistance and consulting services in all aspects of medical equipment management, such as equipment acquisition, personnel assignments, and unique organizational management situations as requested by the MAJCOM.

MERC Trip Documentation

MERC personnel document all maintenance actions accomplished during their visit or any pending actions. Local BMETs must process the work accomplished into the Defense Medical Logistics Standard Support (DMLSS) system and update all work orders completed by MERC. At bases without DMLSS, MERC personnel document all work on AF Forms 509, *Medical Equipment Maintenance Record*. To ensure that supported bases are adequately informed, the MERC prepares a trip report reflecting all actions accomplished. A copy of the trip report is sent to the MTF Commander of the supported facility, and an electronic copy of the report with attachments is sent to the applicable MAJCOM functional manager (to include ANG and AFRES), and to the Clinical Engineering Branch. Copies of the Radiology Technical Attachment are sent to the medical physicist for the region..

The serviced medical facility must review the report and respond in writing to any items that require local action. The response letter must be sent to the MERC within 45 days of receiving the report, with copies sent to the applicable MAJCOM Functional Manager and to the Clinical Engineering Branch. MERCs maintain a copy of the trip report and related information on file for two years.

004. BMET workcenter management

At the local level, the MERCs have the same responsibilities that BMETs have in a small clinic.In a nutshell, the medical equipment maintenance program ensures medical equipment is serviceable, safe, and properly configured to meet the peacetime and wartime missions of the medical service.

Maintenance of medical equipment is obviously the heart of what we do. As a manager, you are responsible to ensure all of the program elements of the medical equipment maintenance program are met. We will briefly overview the program elements here and then go into detail on certain items in future lessons.

Equipment Lifecycle

The equipment lifecycle starts with technical assistance in pre-purchase evaluating and selecting the medical equipment to ensure the Air Force acquires equipment with optimum performance and safety criteria. Once it arrives, initial inspections, operator training, scheduled preventive maintenance (PM), safety evaluations, calibration, and unscheduled repair of equipment must be performed. The life cycle ends when equipment becomes obsolete or is uneconomical to repair and is turned in for disposal. In addition to the “hands-on” maintenance, there are several management and administrative functions that are required.

Documentation

If it is not documented, it didn’t happen. You could be the best technician in the Air Force, able to fix anything, but if your documentation is poor or non-existent, then the work was not accomplished. Whether it is calibration results, training records, or a memo-for-record, documentation is the key to every maintenance program. Documentation meets both regulatory and accreditation requirements and ensures the overall program is meeting Air Force requirements.

BMET Manager Responsibilities

As a manager of the biomedical equipment repair program, you will have numerous responsibilities. These responsibilities include (but are not limited to) the following:

- Implementing and managing the biomedical equipment repair program.
- Establishing a work control and priority system to ensure uninterrupted service to supported activities.
- Establishing a periodic maintenance and inspection schedule to implement the reoccurring requirements defined by DMLSS and ensuring maintenance personnel perform scheduled maintenance.
- Managing the appropriate use and on-hand supply of repair parts.
- Arranging depot or contract maintenance only for those systems for which the Air Force does not have adequate training, tools, test equipment, and staff.
- Establishing equipment records for non-vehicular medical equipment in ambulances and ensuring it is maintained annually.
- Obtaining required facilities and equipment.
- Implementing and managing a quality assurance program that identifies and corrects hazards and defects.
- Developing an Equipment Management Plan consistent with The Joint Commission or Accreditation Association for Ambulatory Health Care standards.

- Developing and publishing local policies and operating instructions (OI) as required.
- Ensuring a maintenance management metrics program is updated monthly and provided to the Medical Logistics Flight Commander (MLFC) for signature.
- Performing a self-inspection checklist at least annually to ensure that required functions are properly managed.
- Performing a customer survey at least annually to determine the adequacy, quality, and effectiveness of maintenance support and the degree of compliance with Headquarters Air Force, Major Command (MAJCOM), and local maintenance directives.
- Ensuring WRM equipment, if assigned, is maintained in a serviceable condition at all times.
- Ensuring ancillary support equipment such as power distribution systems, environmental control systems, and other applicable real property equipment is operational and in good condition
- Implementing and managing medical equipment maintenance support to Air Force Reserve Command (AFRC) and Air National Guard (ANG) medical activities located at or near your facility.
- Supporting Department of the Army, Navy, or other Federal Government agencies such as Federal Prisons, Indian Health Service, United States Coast Guard, or Veterans Affairs, if such support does not affect Air Force operational missions and is cost effective.
- Performing organizational maintenance on equipment at active duty Aeromedical Evacuation (AE) and Patient Movement Items (PMI) units on their base.
- Coordinating with the Medical Equipment Management Office (MEMO) to identify and appropriately manage all leased, loaned, consigned, or privately owned medical equipment.

As you can see, there are a multitude of responsibilities that are required to manage a BMET shop. It can easily seem overwhelming; just remember you are not alone. Contact your MERC, MAJCOM Functional Manager, or the Clinical Engineering Branch at any time for advice or assistance.

Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

001. Medical maintenance organizational structure

1. With which offices or departments does the Air Force Medical Service coordinate?

2. How many Medical Treatment Facilities are there worldwide?

3. Whom does the AF Surgeon General advise?

4. List the five objectives of the Air Force Medical Support Agency (AFMSA).

5. Which 3-letter office does the Medical Logistics Division fall under?

6. Which 3-letter office does the Clinical Engineering Branch fall under?

7. Where is the Clinical Engineering Branch located?

002. Clinical engineering branch

1. To whom does the Clinical Engineering Branch provide guidance, policy, and consultative services?

2. List the two teams that make up the Clinical Engineering Branch.

3. With which team will you have the most contact?

4. Which team does the Biomedical Maintenance Program fall under?

5. What type of support does the PACS Deployment Team provide?

6. Who maintains overall control over the facility management program?

7. How does the Clinical Engineering Branch assist facility management?

003. Medical equipment repair centers (MERC)

1. Where can you find a complete list of MERC responsibilities?

2. What type of maintenance support does a MERC provide during annual visits to MTFs where a BMET is assigned?

3. What are the two types of scheduled intermediate maintenance support provided by a MERC?

4. List the two equipment categories that the MERC will *always* perform calibration on.

5. List the three equipment categories that the MERC will *always* perform quality assurance testing on.

6. List five engineering support and/or consulting services that the MERC can provide.

7. List the personnel that receive a copy of a MERC trip report.

004. BMET workcenter management

1. Describe the equipment lifecycle.

2. When would you use depot or contract maintenance?

3. Why would you implement and manage a quality assurance program?

4. How often is the maintenance management metrics program updated?

5. Who signs/approves the maintenance metrics?

6. How often should you perform a customer survey?

7. What is the purpose of a customer survey?

8. What other medical activities could you support near your facility?

1–2. BMET Safety Program

Have you ever known someone who was seriously injured at work or at play? In the history of Air Force BMETS, we have had technicians lose fingers, receive severe burns from an oxygen-induced flash fire, and even one who urinated himself after being shocked by a 3-phase 480V X-ray unit.

Though these stories may sound entertaining, they are true accounts that represent what could happen if you don't enforce safe work practices.

Safety should be the first thing you think about in everything you do on *and* off duty. This unit will highlight key safety points you may recall from your 5-level CDCs, and then go on to detail items from a supervisor/manager standpoint. We will cover general safety, safety practices, and hazards associated with equipment.

Safety is everyone's responsibility, but as NCOIC of a BMET shop, personnel safety is *ultimately* your responsibility. You need to know, understand, apply, and enforce the standards. Looking the other way when a technician is not wearing safety goggles while soldering, or wearing jewelry when working on equipment is not acceptable. The well-being of each employee is a major concern in the Department of Defense (DOD) workforce. The federal government has long recognized the need for standardizing procedures and policies related to workers' safety and health. In this section we look at important factors of the Air Force Occupational Safety and Health (AFOSH) program, general safety principles that you should incorporate into your daily duties, and what to do should an accident occur.

005. Principles of general safety

The AFOSH program, in general, is a very large program covering many areas and topics. Fortunately for you, you don't have to be an expert in the overall program. You do, however, need to be very familiar with the AFOSH program standards that apply to the BMET field. In this lesson we will discuss the basis for the AFOSH program, base organizations that can help you in the administration of the AFOSH program, and some important publications that apply to the BMET safety program.

OSHA

The Occupational Safety and Health Administration (OSHA) dictates what must be accomplished in the workplace, but not necessarily how it will be accomplished, or by whom. OSHA is concerned *only* with the safety and health of the worker. In compliance with OSHA, the Air Force created its own occupational safety, fire prevention, and health program called Air Force Occupational Safety and Health (AFOSH).

AFOSH

AFOSH standards are used to publish requirements necessary to prevent the loss of life *and* property based on trends or past history. While OSHA is concerned only with the safety and health of the worker, Air Force commanders must also be concerned with facility safety and loss reduction, since there is no insurance to replace facilities.

Base organizations

On most Air Force bases, the safety program is divided into two categories—safety and health—which are overseen by several organizations.

Base (Wing) Ground Safety Office

The base safety office oversees the *safety* portion of the AFOSH program. This office works in coordination with your unit commander, unit safety representative (which could be you), and the BMET shop to ensure that your job safety needs are met. Safety office programs emphasize the prevention of personal injury and property damage. Examples of safety office concerns are:

- Hazards or mishaps involving machinery.
- Vehicle accidents.
- Problems with physical structures, such as buildings, sidewalks, or streets.
- Injuries to personnel, including on-duty and off-duty mishaps.
- Investigation and reporting of mishaps.

The *health* aspects of the AFOSH program are overseen primarily by the Bioenvironmental Engineering and Public Health offices.

Bioenvironmental Engineering (BEE)

The BEE office tests the workplace environment and monitors personnel for exposure to a variety of environmental conditions. In evaluating your work section, you or one of your technicians may be asked to wear an air sampler, noise dosimeter, or an X-ray film badge, for the purpose of monitoring their environment. The BEEs should perform Industrial Hygiene Routine Surveillance every year or two years, depending on what risk category has been assigned to your shop. They assess:

- Hazardous noise
- Chemicals (type, amount, and frequency of use)
- Heat/cold
- Stress
- Ergonomics
- Ionizing radiation
- Radio frequency (RF)
- Laser radiation
- Ultraviolet radiation
- Personal protective equipment (PPE)

Public Health

Public Health deals primarily with occupational training and medical testing of personnel. They track medical testing and immunizations such as HIV, TB test, annual hearing exams, laser eye exams, and Preventive Health Assessment and Individual Medical Readiness (PIMR).

Report any suspected problems in any area of safety or health to the appropriate agency, and be sure to route safety reports through your Unit Safety Representative (USR). These organizations are also excellent sources of information and guidance in the areas of safety and health.

Safety publications

There are many sources of guidance on the subject of safety. It is important for you to know where to obtain this information. There will be many times in your career when you need information on a safety-related subject or some guidance on safety procedures or practices. Much of the guidance used by the base safety office, Public Health, and Bioenvironmental Engineering comes from AFOSH standards. While you should depend on the information in these publications, knowing which standard to use is sometimes difficult. The AFOSH office publishes many standards, each covering a specific area or subject. It's not reasonable to expect you to know the contents or even the titles of every AFOSH standard, so the best way to manage the information is to know how and where to find it. The best way to locate AFOSH standards is through the AF publications website. The titles usually reflect the contents of the standards, so a quick scan through the site will allow you to find what you are looking for. The following paragraphs will give you a brief description of the most common AFOSH standards, safety-related commercial publications, and AF publications you will need.

AFOSH Standards

AFOSH standards are the safety publications you will likely consult the most. Because you should be most familiar with these standards, we will discuss them first.

AFOSH STD 91–8, Medical Facilities

This standard applies to all Air Force military and civilian personnel working in medical facilities. Its purpose is to assist managers of Air Force medical organizations in keeping a safe environment and

administering a safety program compatible with all codes, standards, and directives. Information contained in this standard focuses on hazards peculiar to health care and health care-related institutions and activities. Some areas in the medical facility covered in AFOSH STD 91–8 are:

- Safety Committee
- Fire prevention and protection
- Electrical safety
- Compressed gases
- Autoclaves and sterilizers
- Laboratory
- Surgery
- Radiology
- Medical Materiel
- Hazardous Waste
- Safety Inspections

AFOSH STD 91–66, General Industrial Operations

This standard applies to all Air Force industrial operations not specifically covered by other AFOSH standards. AFOSH STD 91–66 contains specific information on the following topics:

- General housekeeping
- Stacking materials (18” clearance below ceiling)
- Office safety
- Battery shops/rooms
- Electrical safety
- Jewelry safety

AFOSH STD 91–501, Air Force Consolidated Occupational Safety Standard

This is the “big daddy” of the AFOSH standards. Some of the topics addressed by this standard that you should be familiar with include:

- Human factors
- Physical hazards
- Manual material handling
- Lifting techniques
- Housekeeping
- Stacking materials (18” clearance below ceiling)
- Fire protection/prevention
- Ladders
- Electrical safety
- Jewelry
- Office safety
- Adverse weather
- Hand tool and portable power tools
- Personal protective equipment (PPE)
- Machinery (bench grinder guards)
- Emergency shower/eyewash
- Safety color coding, labeling, and marking for piping systems
- Lockout-tagout program
- Mishap prevention signs and tags
- Flammables and combustibles

As you can see from the above list, this is a large publication with a lot of important safety information. Did you notice the duplication of topics from one safety standard to another? This is one

thing that can make it difficult to find a specific answer. If there is ever conflicting information, it is best to go with the more stringent standard.

Commercial safety publications

AFOSH is not the only publisher of safety information. There are several commercial organizations that publish guidance on various safety-related subjects which are used by your shop.

- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Code of Federal Regulation (CFR)
- Compressed Gas Association (CGA)
- Institute of Electrical and Electronics Engineers (IEEE)
- National Committee for Clinical Laboratory Standards (NCCLS)
- National Council on Radiation Protection (NCRP)
- National Electrical manufacturers Association (NEMA)
- National Fire Protection Association (NFPA)
- Underwriter's Laboratories (UL)

Equipment manufacturer's guidance

All of the safety guidance listed so far is of a general nature. They cover subjects associated with the MTF environment or medical equipment, but no general guidance can provide better, more detailed information about the hazards of an individual equipment item than the manufacturer of that equipment. Most manufacturers are careful to identify any potential hazards associated with the installation and use of their equipment. Carefully read and follow the safety advice of any equipment manufacturer. In addition, manufacturer safety advisories should be passed on to equipment users during in-service training sessions. Appropriately mark all equipment with safety precautions, and have required personnel use safety gear at all times when operating devices. Now, you might say to yourself that all of this seems pretty obvious, but statistics show that most accidents happen because of errors made by people. These errors range from operating equipment improperly to not wearing proper protective equipment. By doing your best to maintain all of the equipment in your facility in a safe condition and educating the staff on its proper use, you will have taken significant steps to prevent accidents from occurring at your medical facility.

Other guidance

The safety publications listed above provide excellent guidance for workplace safety. A comprehensive list of guidance publications used by the medical maintenance career field is located in the 4A2X1 Career Field Education and Training Plan and in AFI 41–201. The publications listed in these Air Force documents are considered essential for operating an effective medical equipment maintenance program. Maintain a current file of safety publications in your shop, and have a training system designed to acquaint you with the contents of each publication.

006. BMET safety program

As BMETs, we are counted on for many things throughout the MTF, and duty days can often be hectic. When you become overwhelmed, it is easy to forget about safety on the job, as the focus changes to getting the job done. However, you must never forget about safety. It is the single most important aspect of any task. Being injured or incapacitated on the job means the work will not be completed. In this lesson we will cover some important aspects of safety on the job and how to report an accident if one should occur.

Safety on the job

Most accidents are caused by the unsafe acts of people, or unsafe conditions that people either don't notice or choose to ignore. The common denominator in these cases is people; people must take an active role in the area of safety. In order for people to maintain a safe working environment, they must possess two things. First, they must possess knowledge about safety and safety practices. This lesson provides you with the knowledge you need on safety issues important to each and every BMET. Secondly, and more importantly, they must possess the correct attitude about safety. Developing a good safety attitude starts with understanding two critical concepts: realizing that you are not invincible, and knowing that accidents can happen to you. A good safety attitude also includes taking the responsibility to act when you discover unsafe conditions. If each worker would consider safety while performing his or her job and act on safety hazards when he or she notices them, most accidents could be avoided.

Your safety is extremely important to the Air Force. Injuries to military personnel cost the government thousands of dollars in lost productivity and resources. Even worse, serious accidents can cost Air Force members the use of limbs, loss of eyesight, and death. Many of these accidents happen on the job and *most of them could be prevented.* In an effort to reduce the chance of Air Force members being hurt on the job, they must be educated on the hazards of the job. All jobs have specific hazards associated with them and biomedical equipment maintenance is no exception. In the course of your job, you will encounter many potentially hazardous situations. X-ray systems, lasers, and nuclear medicine systems possess the potential for severe injury if proper precaution is not used during maintenance. Even a simple piece of electronic equipment has the potential for electrical shock or injury from moving parts, such as a cooling fan blade. So, you can see that safety should never be taken for granted, no matter how simple the task. Keep these basic safety principles in mind and have a good attitude about safety as you go about your duties, and you will surely help reduce the chances of an accident occurring.

Shop specific safety program

In the 5-level Career Development Course (CDC), you learned about safety practices pertaining to biological, chemical, fire, and laser hazards. Specific hazards associated with equipment such as electrical shock, ionizing radiation, flammable and compressed gases, noise, hazardous gases, mechanical hazards, and batteries were also discussed. Specific training on these items should be included in your safety program.

The overall shop safety program needs to be tailored to your specific location. Since the requirements vary from base to base, we will not discuss the specific parts. Your MTF's unit safety representative will be able to give you the mandatory items. If you happen to be appointed as the unit safety representative for your MTF, then your next level will be the base/wing ground safety office.

Mishap reporting

Safety investigations and reports are conducted and written *solely* to prevent future mishaps. In spite of all the efforts to make your MTF a safe and healthy place in which to work, mishaps inevitably occur. Fortunately, most mishaps are minor and result in very little damage (or no damage at all) and relatively minor injuries (or no injury at all). It is sometimes unclear whether or not a mishap should be reported. We will now differentiate between reportable and nonreportable mishaps and outline your responsibilities as a supervisor in handling and reporting mishaps and hazards.

Reportable/nonreportable mishaps

When we discuss reportable versus nonreportable mishaps, we must consider who is reporting the incident. The standards that the base safety office uses to determine if a mishap is reportable come from AFI 91–204, *Safety Investigations and Reports.* AFI 91–204 groups nonnuclear mishaps into classes according to the total dollar value and the extent of injuries involved. As a basic rule, any mishap that results in damage to government property or personal injury that requires medical

attention should be reported. Interpretation of the classification for each mishap is left up to the safety personnel trained to make those decisions. Base safety personnel make a determination based on the information about the mishap as to the extent of reporting requirements.

Handling and reporting procedures

Your first and most important considerations whenever you witness or are involved in a mishap are the immediate removal of accident victims from hazardous situations and rendering of emergency first aid. Your second concern is to help contain the situation that caused (or was started as a result of) the mishap, providing that you can do so without unnecessarily exposing yourself and other personnel to danger. Otherwise, clear the area and call emergency personnel to the scene as quickly as possible.

Initial notification

Notify your chain of command and the immediate supervisor of any injured personnel as quickly as possible after a mishap. Convey the name and rank of the injured party, time and location of the mishap, and a brief description of the injury or mishap to the injured person's supervisor. This basic information is needed for the supervisor's initial notification of the mishap to safety personnel. It might also be a good idea to write down any details of the mishap that you know. If the base safety office requests a formal report, the following information will most likely be required:

- Name, rank, social security number, and organization of all personnel directly involved.
- A brief, general description of how the mishap occurred; injuries sustained by personnel; and the damage done to facilities, vehicles, equipment, and materials.
- Date and time of the mishap.
- The use of personnel safety equipment and safety guidance.
- Duty time lost due to the mishap.

Formal report chain

Once you and/or the supervisor is notified of a mishap, you must contact the unit safety representative (USR), who keeps the unit commander informed of the situation. Your USR normally notifies the base safety office of mishaps. Make these contacts as soon as possible after the mishap to allow the base safety office to meet its suspense for additional upchannel mishap reporting. Local procedures and the nature of the mishap determine what paperwork must be completed for each incident. The required forms vary between the commands and bases. Your local unit or base safety personnel indicate which forms to complete. It is the responsibility of the supervisor of the individual involved in the incident to complete the mishap report as accurately as possible and to meet the suspense.

Reporting hazards

The best way to prevent accidents is to correct dangerous situations before a mishap occurs. In performing your duties, you often travel through large areas of the facility. While working in these areas, take time to notice situations that may be potential safety hazards. These situations can range from a workman's power cord creating a tripping hazard to a problem with the building structure. If possible, immediately correct the hazard. If, for instance, the electrical cord can be relocated to a safe position, the problem is solved and no report is necessary. If the problem cannot be fixed immediately or if it is a recurring problem, then it must be reported. Report all situations or conditions which could have a potential for personal injury or equipment/facility damage to your supervisor and document the hazard on AF IMT (Form) 457, USAF Hazard Report. You can obtain assistance from your USR in filling out this form. Your action may prevent an injury to someone else. If people ignore safety hazards, injuries will continue to occur. The safety of those around you may depend on your safety attitude. Take action to correct hazards. Accurate, detailed information is the key when reporting accidents, incidents, or hazards. This information is used to record damage to government equipment or facilities, and personnel injuries, fatalities, medical costs, and lost duty. But the most important use

of this data is to develop hazard and mishap prevention measures by safety personnel during investigations.

Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

005. Principles of general safety

1. What is the only concern of the Occupational Safety and Health Administration (OSHA)?

2. Why was the Air Force Occupational Safety and Health (AFOSH) program created?

3. Explain the difference between OSHA and AFOSH standards.

4. What is the emphasis of the AFOSH program as overseen by the base safety office?

5. What organization oversees the investigation and reporting of mishaps?

6. What organization conducts testing of the workplace environment?

7. What ten items does an Industrial Hygiene Routine Surveillance assess?

8. What are the responsibilities of the Public Health Office as they pertain to the health aspects of the AFOSH program?

9. Where can you find AFOSH standards?

10. Identify the purpose and content of AFOSH STD 91–8, *Medical Facilities*.

11. List three subjects that are covered in AFOSH STD 91–66, *General Industrial Operations*.

12. List ten topics covered by AFOSH STD 91–501, *Air Force Consolidated Occupational Safety Standard*.

13. What AFOSH standard covers the use of mishap prevention signs and tags and information on the "lockout-tagout" program?

14. What commercial organizations publish safety-related guidance used by your shop?

15. What is the best source of safety information for a specific equipment item?

006. BMET safety program

1. What is the cause of most accidents?

2. What must people posses in order to maintain a safe working environment?

3. How can you have a good safety attitude?

4. As a basic rule, what types of mishaps should be reported?

5. Who should you notify as soon as possible after a mishap?

6. Who does the supervisor notify after becoming aware of a mishap?

7. Who normally notifies the base safety office of a mishap?

8. After a mishap has been reported, what organization determines the extent of additional upchannel reporting?

9. Once the proper documentation is determined by base safety personnel, whose responsibility is it to complete the mishap forms?

10. What is the best way to prevent accidents?

11. When should a hazard be reported?

12. What form is used to document a hazard?

13. Why is accurate information important when reporting accidents, incidents, or hazards?

1–3. Professional Relations and Ethics

Over the years, biomedical equipment technicians have earned a great deal of respect for their technical abilities. This respect did not come about *only* because BMETs have been good at keeping the equipment working, but because of the manner in which they did it. It's up to you to continue the tradition so the BMETs who follow behind you enjoy the same respect that you enjoy today. By practicing the ethical guidelines in this section, you will also serve to develop and maintain professional relations with the staff, patients, and visitors throughout the MTF.

007. Professional relations

As a BMET you are a member of several teams. First, you are a part of the team of BMETs within your shop. Each member in the shop must pull their own weight to help the team get the job done. From previous lessons in this course, you already know what your responsibilities are to this team. Secondly, and more importantly, you and your shop are part of the team that makes up the MTF staff. As a member of the medical staff your responsibilities are not restricted to just repairing medical equipment. You are evaluated by our customers on your appearance, your attitude, and how well you interface with other staff members, patients, and visitors.

Relationship with MTF staff

You will be in constant contact with the MTF staff while performing your assigned duties. The outcome of this contact affects the attitude of the MTF staff toward the biomedical maintenance shop. When dealing with the staff, it is important to present a positive and professional attitude. If your dealings are negative, then you may lose cooperation with the staff, making your job tougher when looking for equipment. Keeping a good working relationship with the staff is easy. The staff will treat you and your colleagues with respect and cooperation if you are always honest, courteous, helpful, knowledgeable, and professional. If you are asked a question and you do not know the answer, arrange to provide the information at a latter time. If you are argumentative, arrogant, sloppy, or otherwise unprofessional, then you and your fellow BMETs will pay the price. Remember, you represent your shop and if you present a bad impression then your shop will also suffer.

At times you may have to discuss unpopular topics with a MTF staff member. Maybe you are discussing possible equipment abuse, lack of user maintenance, or lost equipment. These discussions can put people on the defensive and possibly lead to harsh words. In these instances, choose your words carefully. Put yourself in the other person's shoes and imagine how the conversation feels from his or her point of view. Make every effort to avoid a confrontation. Remember, even if you are right, no one wins if you argue. Is making your point worth it if the result is losing the cooperation of an entire section of the MTF? If you find that you need assistance or advice in communicating with

hospital staff members, contact your supervisor. Your supervisor can guide you or possibly handle a difficult situation for you. The bottom line is to always strive to maintain a good rapport with the MTF staff. It is much easier to do your job when you have their cooperation. If your staff contact is positive and you provide quality maintenance, the staff will appreciate your work and you will enjoy working with them.

Relationship with patients and visitors

Although the majority of your job is spent working on equipment, you will have interactions with patients on a regular basis. You may work on equipment in their rooms, pass them in the halls, or in some facilities they may bring their personal items to your shop for inspection. The same contact occurs with MTF visitors. Remember that you are a member of the medical team and need to present a professional image at all times.

Doctors, nurses, and medical technicians receive training to deal with patients in clinical situations. Your contact with patients and visitors is usually informal, such as passing in hallways, riding the same elevators, or inspecting personal equipment. In these contacts your part is very simple: always be courteous, helpful, and present a professional image.

Seems pretty obvious and simple, doesn't it? Why do we even discuss it? Well, sometimes, medical personnel who are not in direct patient care forget that their job assists in providing care to our patient population. Patients come to our facility because they are ill; visitors are there to see a sick friend or relative. In either case, their thoughts are more focused on their own condition or that of a friend or loved one and not always on the business at hand. As a member of the medical staff, you should be aware of the patients' needs. If you happen upon a lost patient or visitor in the hallway, you should offer assistance. Don't just point them in the right direction, take a few moments and walk them to their destination.

When working in patient rooms, always contact the care provider before entering. Be aware of the patient's conditions and to help reduce patient stress, explain what you are doing. Always show patience, compassion, and understanding. Remember, patients and visitors are constantly making judgments about your medical facility and its services. As a member of the medical staff, your moment of assistance or understanding can pay big dividends in their opinion of the care received.

008. Ethics

Ethics is very important in your day-to-day activities. Why? Ethics will guide you in how you perform your duties. Throughout your BMET and AF career you will be tempted to compromise standards and guidelines, but if you follow acceptable standards or ethics you will not give in to those temptations. Let's take a look at three areas of ethics that we need to consider: Professionalism and integrity, BMET ethics, and medical ethics.

Professionalism and integrity

BMETs are in a unique situation in the MTF. No one else in the facility knows as much about equipment theory, application, and electrical safety. For this reason, the MTF staff depends totally on our abilities and knowledge in these areas. A BMET's advice has always been of great value to those in the chain of command. The actions of the BMETs that preceded you made this happen. They did their job so well that, at this point in time, just being a BMET automatically implies that you too possess the same abilities and knowledge, and you are respected for it.

You enjoy this respect today because the BMETs who came before you possessed the qualities of *professionalism and integrity.* They took the knowledge and skills that made them excellent technicians and combined it with high moral values to create a standard of uncompromising professionalism and integrity. You must maintain this high standard. As a BMET, your professionalism and integrity are tested every time you close out a work order, or advise your Medical Logistics Flight Commander (MLFC) on equipment problems or electrical safety. If you accomplish

equipment repairs correctly, in a safe manner, and ensure it is immediately ready for use, you have displayed professionalism and integrity. Likewise, if you provided correct and unbiased information to your MLFC, then you have displayed the qualities of professionalism and integrity. It's up to you to uphold the BMET tradition. You must display these qualities in everything that you do.

BMET ethics

Ethics is the code of conduct which we live by. It all goes back to the Air Force Core Values. Ethics should guide you through your everyday work environment. Why are ethics so important to a BMET? Because your daily work has an effect on people; they place their lives in your hands each time they are connected to a piece of medical equipment you have worked on. It is extremely important to be very ethical each time you do a job because even one poor decision can have many negative effects on you as well as others. Each time you complete a job you should ask yourself certain questions to ensure you did it right:

1. Did I do this job the very best I could?
2. Did I follow all applicable guidance?
3. Would I want this piece of equipment used on me or my family?
4. Did I leave everything the way I found it or better?
5. Is there anything I could have done better?

If you feel comfortable answering all these questions, then you performed your job in an ethical way. Don't let laziness or a lackadaisical attitude ruin your and your shop's reputation, or, worse yet, cause an injury to a patient or staff member. Always let proper ethics be your guide.

Medical ethics

There is another aspect to ethics that you should also be concerned with—medical ethics. Because you don't work with patients on a daily basis you don't need to be an expert on this topic. However, you do work in a medical environment and may find yourself in a situation that requires ethical actions on your part. For example, imagine being called into an operating room to make an emergency repair and the patient on the table happens to be a friend of yours. You suddenly learn specific health-related information about your friend that you never knew before. How would you handle this situation? Well, let's take a brief look at medical ethics and see if we can find the answer to that question.

Medical ethics is a very important aspect of your job and is governed by laws. The Health Insurance Portability and Accountability Act (HIPPA) established federal regulations for the privacy and security of healthcare information. Because you work in a medical environment, there is patient medical information, known as protected health information (PHI), everywhere around you, even though you don't work with it as part of your job. Some examples of PHI are patient medical records and telephone calls, emails, and verbal communication that contain patient health information.

In your duties as a BMET, you do not have a need-to-know because patient information is protected. Any patient-related conversations or information you might come in contact with should be protected and not shared with anyone. Of course, you can't always hide from those situations and conversations and you may, from time to time, be privy to sensitive information (such as the example we mentioned earlier). If you do unintentionally see or hear some type of PHI, simply keep it to yourself. Also, avoid the temptation to snoop, pry, or gossip about patient information. If you stick to these simple principles, you should not have any problems as you go about your business. Additionally, if you see a problem with PHI, such as medical records lying around unprotected or a computer in plain view with patient data displayed, notify someone in charge of the area so that the information can be secured.

Hopefully, you now know how to handle that hypothetical situation about your friend in the operating room. Of course, the answer is to keep the information to yourself. That was pretty easy, wasn't it?

As we mentioned before, because working with patients is not your job, you don't have to be an expert, but remember to always treat patient information carefully.

Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

007. Professional relations

1. What personal qualities should you exhibit in your dealings with MTF staff members in order to gain their cooperation and respect?

2. Whom should you contact if you are having problems communicating with a member of the MTF staff?

3. Why is it important for you to be courteous to patients and present a good appearance when working in the facility?

008. Ethics

1. How do you demonstrate the qualities of professionalism and integrity in your BMET duties?

2. Why are ethics so important to a BMET?

3. What questions should you ask yourself after you complete a task on a piece of medical equipment to ensure you did it right?

4. Which is the purpose of the Health Insurance Portability and Accountability Act (HIPPA)?

5. Where could you come in contact with Protected Health Information (PHI)?

6. What should you do if you are working in the pediatric clinic and you notice a patient's medical record lying open on the counter, unattended?

Answers to Self-Test Questions

001

1. Assistant Secretary of Defense for Health Affairs, the major air command surgeons, the Departments of the Army, Navy and other government agencies.
2. 74.

3. Secretary of the Air Force, Air Force Chief of Staff, and the Assistant Secretary of Defense for Health Affairs.
4. (1) Seamlessly modernize medical care to support the war fighter.
   (2) Lead needs determination, requirements building, technology searches and evaluations, cost assessments, and acquisition strategies to successfully transition products to the end user.
   (3) Promote novel, cutting-edge R&D to improve medical care.
   (4) Identify off-the-shelf products to address urgent and compelling needs in the fixed site or deployed medical setting.
   (5) Modernize information systems and knowledge exchange mechanisms to promote fast, efficient, safe, and secure communications enterprise wide).
5. Healthcare Operations (SG3).
6. Modernization (SGR).
7. Co-located with the Medical Logistics Division at Ft Detrick, MD.

002

1. Air Force Surgeon General, the Air Force medical logistics community, and Air Force Biomedical Equipment Repair (4A2) personnel.
2. Healthcare Technology Management (HTM) Team and the Picture Archiving and Communication Systems (PACS) Deployment Team.
3. Healthcare Technology Management Team.
4. Healthcare Technology Management Team.
5. Total PACS lifecycle support.
6. Headquarters Air Force Medical Support Agency, Health Facilities Division (AFMSA/SGSF).
7. By providing technical support for facility managers, communication with other agencies for facility issues, liaison with Air Force for manning, resources, civil engineering, and logistics.

003

1. In AFI 41–201.
2. Intermediate maintenance support.
3. On-site calibrations and quality assurance inspections.
4. Audiometers and X-ray equipment.
5. Anesthesia equipment, defibrillators, and ventilators.
6. Any five of the following:
   (1) Consultation and technical services in critical areas of medical instrumentation and electrical safety.
   (2) Preprocurement surveys for planned complex equipment purchases.
   (3) Install major equipment systems.
   (4) Acceptance inspections for contractor-installed major equipment items.
   (5) Manning assistance.
   (6) Backup medical equipment maintenance support.
   (7) Emergency assistance during base closure or expansion actions.
   (8) Assistance and consulting services in all aspects of medical equipment management.
7. (1) The MTF Commander of the supported facility.
   (2) An electronic copy with attachments is sent to the applicable MAJCOM functional manager.
   (3) Electronic copy is also sent to the Clinical Engineering Branch.
   (4) Regional Medical Physicist (Radiology Technical Attachment only).

004

1. The equipment lifecycle starts with technical assistance in prepurchase evaluating and selecting the medical equipment to ensure the Air Force acquires equipment with optimum performance and safety criteria. Once it arrives, initial inspections, operator training, scheduled preventive maintenance (PM), safety evaluations,

calibration, and unscheduled repair of equipment must be performed. The life cycle ends when equipment becomes obsolete or is uneconomical to repair and is turned in for disposal.

2. When the Air Force does not have adequate training, tools, test equipment, and staff.
3. Because it identifies and corrects hazards and defects.
4. Monthly.
5. Medical Logistics Flight Commander (MLFC).
6. At least annually.
7. It determines the adequacy, quality, and effectiveness of maintenance support and the degree of compliance with Headquarters Air Force, Major Command (MAJCOM), and local maintenance directives.
8. Air Force Reserve Command (AFRC), Air National Guard (ANG), Army, Navy, or other Federal Government agencies such as Federal Prisons, Indian Health Service, United States Coast Guard, or Veterans Affairs.

005

1. Safety and health of the worker.
2. To prevent the loss of life *and* property based on trends or past history.
3. OSHA is concerned only with the safety and health of the worker, AFOSH also takes property into account
4. Prevention of personal injury and property damage.
5. Base safety office.
6. Bioenvironmental Engineering.
7. (1) Hazardous noise.
   (2) Chemicals (type, amount, and frequency of use).
   (3) Heat/cold.
   (4) Stress.
   (5) Ergonomics.
   (6) Ionizing radiation.
   (7) Radio frequency (RF).
   (8) Laser radiation.
   (9) Ultraviolet radiation.
   (10) Personal protective equipment (PPE).
8. They track medical testing and immunizations such as HIV, TB test, annual hearing exams, laser eye exams, and Preventive Health Assessment and Individual Medical Readiness (PIMR).
9. Through the AF publications website.
10. To assist managers of Air Force medical organizations in keeping a safe environment and administering a safety program compatible with all codes, standards, and directives. This standard highlights hazards peculiar to health care and health-care-related institutions and activities.
11. Any three of the following:
    (1) General housekeeping.
    (2) Stacking materials (18” clearance below ceiling).
    (3) Office safety.
    (4) Battery shops/rooms.
    (5) Electrical safety.
    (6) Electrical safety boards.
    (7) Jewelry safety.
12. Any ten of the following: (1) Human factors, (2) Physical hazards, (3) Manual material handling, (4) Lifting techniques, (5) Housekeeping, (6) Stacking materials (18” clearance below ceiling) (7) Fire protection/prevention, (8) Ladders, (9) Electrical safety, (10) Jewelry, (11) Office safety, (12) Adverse weather, (13) Hand tool and portable power tools, (14) Personal protective equipment (PPE), (15) Machinery, (16) Emergency shower and eyewash units, (17) Safety color coding, labeling, and marking for

piping systems, (18) Lockout and tagout, (19) Mishap prevention signs and tags, and (20) Flammables and combustibles.

13. AFOSH STD 91–501, *Air Force Consolidated Occupational Safety Standard.*
14. *American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), Code of Federal Regulation (CFR), Compressed Gas Association (CGA), Institute of Electrical and Electronics Engineers (IEEE), National Committee for Clinical Laboratory Standards (NCCLS), National Council on Radiation Protection (NCRP), National Electrical Manufacturers Association (NEMA), National Fire Protection Association (NFPA), Underwriter's Laboratories.*
15. The equipment manufacturer's manuals.

006

1. The unsafe acts of people or unsafe conditions that people either don't notice or choose to ignore.
2. (1) Knowledge about safety and safety practices, and (2) A correct attitude about safety.
3. Realizing that you are not invincible, knowing that accidents can happen to you, and taking the responsibility to act when you discover unsafe condition.
4. Any mishap that results in damage to government property or personal injury that requires medical attention should be reported.
5. Your chain of command and/or the supervisor of any injured personnel.
6. Unit safety representative (USR).
7. Unit safety representative (USR).
8. The base safety office.
9. Supervisor of the individual involved in the mishap.
10. To correct dangerous situations before a mishap occurs.
11. If the problem cannot be fixed immediately, or if it is a recurring problem.
12. AF IMT (Form) 457, USAF Hazard Report.
13. Safety personnel use this information during investigations to develop safety statistics, and to develop hazard and mishap prevention measures.

007

1. Honesty, courtesy, helpfulness, knowledgeable, and professional.
2. Your supervisor.
3. Patients are constantly forming opinions about your medical facility and its services.

008

1. By accomplishing equipment repairs correctly, in a safe manner, and ensuring it is immediately ready for use and by providing correct and unbiased information to your MLFC.
2. People place their lives in your hands each time they are connected to a piece of medical equipment you have worked on.
3. (1) Did I do this job the very best I could?
   (2) Did I follow all applicable guidance?
   (3) Would I want this piece of equipment used on me or my family?
   (4) Did I leave everything the way I found it or better?
   (5) Is there anything I could have done better?
4. HIPPA establishes federal regulations for the privacy and security of healthcare information.
5. Everywhere.
6. Notify someone in charge of the area so that the information can be secured.

Do the unit review exercises before going to the next unit.

Unit Review Exercises

Note to Student: Consider all choices carefully, select the *best* answer to each question, and *circle* the corresponding letter. When you have completed all unit review exercises, transfer your answers to ECI (AFIADL) Form 34, Field Scoring Answer Sheet.

Do not return your answer sheet to AFIADL.

1. (001) Within the Medical Logistics organization, under which directorate is the Medical Logistics Division aligned?
   a. 3-Letter Office of Modernization (SGR).
   b. 3-Letter Office of Force Development (SGC).
   c. 3-Letter Office of Healthcare Operations (SG3).
   d. 3-Letter Office of Medical Plans and Programs (SGM).

2. (001) Who develops force management policies and programs, develops contingency planning policy, validates deployment requirements, and verifies workforce availability?
   a. Air Force Surgeon General (AF/SG).
   b. MAJCOM Functional Manager (MFM).
   c. Air Force Career Field Manager (AFCFM).
   d. Directorate of Policies, Programs, and Manpower (DPPM).

3. (001) Who monitors the health and manning of our career field, manages formal training, and disseminates career field policies within their command?
   a. Air Force Surgeon General (AF/SG).
   b. MAJCOM Functional Manager (MFM).
   c. Air Force Career Field Manager (AFCFM).
   d. Medical Equipment Repair Center (MERC) Chief.

4. (001) Where can you find a current listing of the Biomedical Equipment Technician (BMET) MAJCOM Functional Managers (MFM)?
   a. On the MAJCOM websites, Key Personnel.
   b. In the Air Force Medical Logistics Letter (AFMLL).
   c. On the Clinical Engineering Branch website, “The Chief’s Corner.”
   d. On the Air Force Personnel Center (AFPC) website, Enlisted Section.

5. (002) Which organization is the hub of the Biomedical Equipment Program?
   a. Clinical Engineering Branch.
   b. Medical Equipment Repair Center.
   c. Air Force Medical Support Agency.
   d. Air Force Medical Operation Agency.

6. (002) Which Clinical Engineering Branch team is responsible for policy and guidance, patient safety, sustainment operations, acquisition, and direct contact with our Tri-Service counterparts?
   a. Biomedical Equipment Program.
   b. Healthcare Technology Management.
   c. Medical Equipment Repair Center (MERC).
   d. Picture Archiving and Communication Systems (PACS) Deployment.

7. (002) What is the primary focus of the Biomedical Maintenance Program?
   a. Track and maintain mission ready equipment throughout the Air Force.
   b. Provide lifecycle support for all medical equipment throughout the Air Force Medical Service.
   c. Ensure the highest quality patient care and safety through the proper maintenance of medical equipment.
   d. Provide policy and guidance, sustainment, acquisition, and direct contact with our Tri-Service counterparts.

8. (002) What function does the Picture Archiving and Communication Systems (PACS) Deployment Team perform?
   a. Research and Development of new PACS technology.
   b. Total PACS lifecycle support to all Medical Treatment Facilities.
   c. Installation and maintenance to all PACS systems in deployed status.
   d. Installation, calibration, and acceptance inspections on new PACS systems only.

9. (002) Which organization maintains overall control of the facility management program and formulates policies and guidance for the Air Force medical facility program?
   a. Air Force Medical Operations Agency (AFMOA).
   b. Air Force Medical Logistics Office, Clinical Engineering Branch.
   c. Air Force Assistant Surgeon General for Medical Programs and Resources.
   d. Headquarters Air Force Medical Support Agency, Health Facilities Division.

10. (003) What is the *first line* of help for technical assistance and maintenance management issues for local Biomedical Equipment Technician (BMET) activities within a defined region?
    a. Air Force Medical Logistics Office.
    b. Medical Logistics Flight Commander.
    c. Medical Treatment Facility (MTF) Commander.
    d. Supporting Medical Equipment Repair Center (MERC).

11. (003) Your supporting Medical Equipment Repair Center (MERC) will perform quality assurance (QA) testing on all of the following, *except*
    a. ventilators.
    b. suction units.
    c. defibrillators.
    d. anesthesia equipment.

12. (003) Within how many days after receiving the MERC trip report must you provide a response?
    a. 30.
    b. 45.
    c. 60.
    d. 90.

13. (004) How often are maintenance management metrics provided to the Medical Logistics Flight Commander (MLFC)?
    a. Weekly.
    b. Monthly.
    c. Quarterly.
    d. Annually.

14. (004) How do you determine the adequacy, quality, and effectiveness of maintenance support?
    a. Perform a self-inspection.
    b. Perform an annual customer survey.
    c. Request a Management Assistance Visit.
    d. Establish maintenance management metrics.

15. (005) What organization oversees the investigation and reporting for hazards and mishaps involving personnel and property?
    a. Base Safety Office.
    b. Public Health Office.
    c. Office of Special Investigation.
    d. Bioenvironmental Engineering Office.

16. (005) Which is a responsibility of the Bioenvironmental Engineering Office?
    a. Occupational training of personnel.
    b. Overseeing accident investigations.
    c. Medical testing of personnel.
    d. Testing of the workplace.

17. (005) What organization should be contacted to perform a workplace survey for a suspected noise exposure problem?
    a. Public Health.
    b. Base Safety Office.
    c. MTF Safety Office.
    d. Bioenvironmental Engineering.

18. (005) What AFOSH standard is a consolidated publication covering numerous safety topics including fire protection, electrical safety, and the lockout-tagout program?
    a. AFOSH STD 91–8.
    b. AFOSH STD 91–66.
    c. AFOSH STD 91–67.
    d. AFOSH STD 91–501.

19. (005) What regulation or manual contains a *comprehensive* list of guidance publications used by the medical maintenance career field?
    a. AFI 41–201.
    b. AFI 41–203.
    c. AFHOSH STD 91–8.
    d. AFMAN 23–110V5.

20. (006) Why are safety investigations and reports conducted and written?
    a. To prevent future mishaps.
    b. To assign blame for the incident.
    c. To determine the cost of the incident.
    d. To make a line-of-duty determination.

21. (006) When does a mishap become reportable?
    a. Only when someone finds out.
    b. When it results in damage in excess of $500 and/or missed duty time.
    c. When it results in damage in excess of $1000 and/or missed duty time of 24 hours or more.
    d. When it results in damage to government property or personal injury that requires medical attention.

22. (006) As soon as possible after a mishap, notify the injured person’s
    a. next of kin.
    b. closest friend.
    c. immediate family.
    d. immediate supervisor.

23. (006) Who is responsible for completing mishap reports and meeting required reporting suspenses?
    a. Base safety personnel.
    b. Unit safety representative.
    c. Supervisor of the individual involved.
    d. Commander of the individual involved.

24. (007) What is the best way to deal with a hospital staff member that has lost a piece of equipment?
    a. Be firm and quote the regulations.
    b. Send an e-mail to their chain of command.
    c. Send a letter to their squadron commander.
    d. Be honest, courteous, helpful, knowledgeable, and professional.

25. (007) If you see a visitor or patient in the hallway looking lost, what should you do?
    a. Draw them a map.
    b. Walk them to their destination.
    c. Point them to the information desk.
    d. Cheerfully give them detailed directions.

26. (008) What establishes federal regulations for the privacy and security of healthcare information?
    a. Privacy Act of 1974.
    b. Code of Federal Regulations (CFR).
    c. Health Insurance Portability and Accountability Act (HIPPA).
    d. Joint Commission on the Accreditation of Healthcare Organizations (JCAHO).

27. (008) What should you do if you see a computer monitor with patient information displayed in plain view of the main hallway?
    a. Shut the door.
    b. Turn off the monitor.
    c. Notify the Noncommissioned Officer in charge (NCOIC) or OIC of that area.
    d. Report the situation to the Medical Treatment Facility (MTF) Privacy Officer.

Please read the unit menu for unit 2 and continue ➔

Unit 2. Managing Shop Resources and Administration

YOUR BMET shop did not just magically appear when the MTF was built. There are several factors that were considered in establishing and maintaining a maintenance program: manpower, the facility itself, tools, and test equipment. Numerous factors come in to play in justifying these items. The Air Force is constantly looking at ways to save manpower and money, therefore a thorough understanding of the processes is essential to properly managing the resources of your shop.

Data quality and accurate historical maintenance records are vitally important for a successful maintenance program. It takes a daily effort to identify and maintain these records. If a piece of equipment is misidentified, you could easily overlook it for an important recall. It all boils down to patient safety.

2–1 Managing Shop Resources

One of the most challenging tasks you will face in your career, especially as you progress in rank and level of responsibility, will be ensuring your shop has everything it needs to operate. As mentioned earlier, it takes manpower, facilities, money, and equipment to maintain and operate a shop. In this section, you will learn how to manage these important resources. Let’s begin with manpower.

009. Managing manpower

Manpower is the essential resource, which enables squadrons, flights, and elements to perform their respective missions. The formulas and computations that go into figuring manpower authorizations are complex, and the funding that is required to receive manpower goes through an arduous process. What all that means is that there is no “manpower fairy” who can wave a magic wand and give your shop all the people it needs at any given time. In reality, there are some things that supervisors can do to help the shop receive and retain the personnel it needs to get the job done. This lesson explains how to manage medical manpower, to include manpower authorizations and how those authorizations are filled.

Chain of responsibility

All budgeted and programmed manpower resources for the total Air Force (active duty, AFRC, and ANG) are derived from two sources: the DOD Future Years Defense Program (FYDP) and the Air Force’s Force and Financial Plan (F&FP). The DOD uses elements of the FYDP to budget for and control its resources. The Air Force uses the F&FP to budget for and control its portion of resources allocated from the DOD.

From the FYDP and F&FP, the Directorate of Manpower and Organization (HAF/A1M) allocates programmed manpower resources to the MAJCOMs who, in turn, direct implementation of approved programs. The MAJCOMs translate the manpower resources into manpower authorizations by updating the Manpower Programming and Execution System (MPES) by organization, AFSC, grade,

etc. The installation Manpower and Organization Flight (MOF) office serves as a liaison on MOF issues between installation agencies and the MAJCOM Manpower and Organization staff.

Manpower standards

The Air Force Manpower Standard (AFMS) is the primary management tool for determining manpower authorizations and requirements. This standard identifies the minimum essential manpower required for the most effective and economical mission accomplishment. The AFMS quantifies manpower requirements using a workcenter's man-hours and workload data. The Air Force uses manpower standards to distribute manpower resources in both peacetime and wartime environments. The standard used to determine manning for all Medical Logistics (to include BMET shops) is AFMS 5530. For ease of access, all manpower standards have been placed on the Internet at: https://www.afma.randolph.af.mil. Manning in the BMET shop is on average, 21% (not including MERC additives) of Medical Logistics' total manning. The additional manning that the MERCs earn are dependant on how many Active, Guard, and Reserve bases they support as listed in AFI 41–201.

Manpower terms

Before we move on, we need to clarify a couple of terms you need to be familiar with; workcenters and workload.

Workcenters

A workcenter, also known as a functional area, is an organizational section with a unified purpose identified as a pool of manpower. The workcenter is identified by a Functional Account Code (FAC). The BMET shop falls under Medical Logistics (5530) and has a unique FAC of 553002. But bear in mind, a BMET can be assigned to Facilities Management FAC 553003.

Workload

Workload is the amount of work expected from each technician in a given period of time. The workload for the BMET shop is obtained from DMLSS reports and Medical Expense and Performance Reporting System (MEPRS) reports. (We'll go more in depth on MEPRS shortly.) They provide comprehensive data on workload performed and miscellaneous statistical information. This data provides timely information needed to manage the biomedical equipment maintenance program and is usually the source document for computing workcenter manpower.

Manning documents

Up to this point, you don't have much input into the manpower process. There are, however, some things you can do at the local level, to justify the manning levels in your shop. We will now take a look at two documents that you can use to monitor the manning within your shop.

Unit Manning Document (UMD)

The UMD is a report reflecting the unit's total manpower authorizations, both civilian and military, funded and unfunded. This is the controlling document for your shop's manpower and shows the authorized AFSCs, skill levels, grades, position numbers, and future Fiscal Year (FY) manning levels for each workcenter. If you are in a supervisory position, you should routinely request and review this document for accuracy and to track manpower strength for your shop. If you notice manning numbers dropping off in a future FY, you need to find out why. It is easier to correct it before it happens than trying to change it after-the-fact. Figure 2–1 shows a UMD for a 5-man shop. Depending on the source of the UMD, some data may be masked with "XXXX" as in the MNT column of Figure 2–1. The table below describes some of the more commonly referenced codes used on the UMD.

OSC	POS NBR	FAC	REQ AFSC PREFIX	REQ AFSC	GRD	RGR	RIC	MNT	SAR	PEC	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SGSL	000533990J	553002		4A231	A1C	A1C	0104	XXXXX	6	00087700A	1	1	1	1	1
SGSL	002604530J	553002		4A251	SSGT	SSGT	0104	XXXXX	6	00087726A	1	1	1	1	1
SGSL	003150710J	553002		4A251	SRA	SSGT	0104	XXXXX	6	00087726A	1	1	1	1	1
SGSL	002735090J	553002		4A271	MSGT	MSGT	0104	XXXXX	6	00087726A	1	1	1	1	1
SGSL	003150750J	553002		4A271	TSGT	TSGT	0104	XXXXX	6	00087726A	1	1	1	1	1

SI075636003

Figure 2–1. Unit Manning Document (UMD).

UMD Code	Description
OSC	The Organization Structure Code is a two to seven character code that identifies the structure of the unit. The lesser number of characters, the higher echelon placement of that function in the unit. OSCs are useful to determine who reports to whom in a unit.
POS NBR	The Position Number is a seven-digit number used to identify authorizations against a particular position.
FAC	The Functional Account Code is used to identify functions. A function is a homogeneous grouping of tasks. FACs are six-digit codes used to identify functions down to the basic workcenter. More than one FAC may be listed under a single OSC. This indicates that the functions are combined into a single workcenter. Manpower standards are developed by FAC.
REQ AFSC PREFIX	The Special Experience Identifier (SEI) indicates the special experience or qualification required for a particular authorization, such as “T” for instructors.
REQ AFSC	The Air Force Specialty Code identifies the officer or enlisted specialty as found in AFMANs 36–2105 and 36–2108. This title corresponds to the AFSC but can be overridden by a duty code.
GRD	The authorized Grade for the particular position is the grade that the personnel system uses to assign personnel. If the workload against the position is performed by a contractor, “CME” is entered in this column for the affected position.
RGR	The Required Grade indicates the grade that particular position was earned at by manpower determinants (standards, guides, etc.). Funding constraints and Career Progression Group (CPG) constraints cause differences between the required grade and the authorized grade.
MNT	The Manpower Type code indicates whether the position is a funded or an unfunded authorization. AN: Funded authorization; PN: Unfunded authorizations.
SAR	The Security Access Requirement data code field indicates the level of security access required for job performance. Commanders must request the coding and either Headquarters AFSPC/DOIS or Security Forces will validate the requirement.
PEC	The Program Element Code is a six-digit code utilized to identify any of the ten Major Air Force Programs for which positions are authorized by HAF.

Unit Personnel Manpower Roster (UPMR)

The UPMR is basically the UMD with the addition of personnel assigned, by name, against specific manpower authorizations of the workcenter/functional area. The UPMR is a locally used product that is generated by Military Personnel Data System (MilPDS) from your orderly room. This document also shows projected gains, losses, and separations. As a manager, you should routinely request and review the UPMR to ensure personnel are assigned to the correct position numbers, AFSCs, grade authorizations, and special experience identifiers (SEI). The UPMR needs to be updated as personnel are upgraded and promoted. When you are notified that personnel are projected inbounds to your shop, the Commander’s Support Staff generally gives you a data sheet to fill out assigning the new troop a sponsor, supervisor, and position number, which is given to the orderly room for input into MilPDS. If you don’t give them a position number, the orderly room will usually plug a name into the first position number they find, which can cause the slot to be double or triple booked. It is important to keep this up-to-date because the data that shows up on Enlisted Performance Reports (EPRs) comes from the same system.

Figure 2–2 is the corresponding UPMR for the preceding UMD. The first step in reviewing the UPMR is to ensure the position numbers listed on the UMD match up with the position numbers on the UPMR. Mismatched data is flagged with an asterisk "*", which needs to be corrected. Starting at the bottom, MSgt Gatton is in a TSgt slot and should be moved to the MSgt slot (located below the TSgt slot on the UPMR). He is also noted as a "LOSS". SSgt Brown is in the correct slot for his skill level and grade. TSgt Buhr is flagged because he is in an A1C slot. Even though he is a 3-level (cross-trainee) he should still be assigned to the 7-level TSgt slot. A1C Richardson is flagged because he is double-slotted under TSgt Buhr. That flag will clear when TSgt Buhr is moved. "LOSS" and "GAIN" are due to PCS orders. If a member is separating, it will be coded as "SEP".

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Tue Jul 25 11:58:11AM 2006

                                        PERSONAL DATA - PRIVACY ACT OF 1974 (USC 552a)

(NOTE: >>> INDICATES INCORRECT OR NO POSITION DATA,  # INDICATES UNFUNDED POSITIONS, * INDICATES MISMATCH DATA)

                CURR   PROJECTED QUARTERS
    AFSC    GR  QTR    + 1   + 2  + 3  + 4     POS-NR     SAR  FAC     PEC        SEI  PRP  RPI  MP-RMKS
      DAFSC     GR   NAME                      SSAN         DS  CAFSC    PAFSC    2AFSC    3AFSC    4AFSC
      REMARKS

    -4A231  A1C   1      1    1     1    1     00533990J   6   553002  0087700A            Z
      -4A231    *TSG  BUHR, JAMES F JR         XXX-XX-XXXX  00  -4A231   -3A071   -4A231
     *-4A231     A1C  RICHARDSON, QUENTI       XXX-XX-XXXX  00  -4A211   -4A211

    -4A251  SRA   1      1    1     1    1     03150710J   6   553002  0087726A            Z

    -4A251  SSG   1      1    1     1    1     02604530J   6   553002  0087726A            Z
      -4A251    SSG  BROWN, BENJAMIN C        XXX-XX-XXXX  00  -4A251   -4A271

    -4A271  TSG   1      1    1     1    1     03150750J   6   553002  0087726A            Z
      -4A271    *MSG  GATTON, JEFFREY D        XXX-XX-XXXX  00  -4A271   -4A271   -2E051
      LOSS: 30 OCT 2006

    -4A271  MSG   1      1    1     1    1     02735090J   6   553002  0087726A            Z


SGSL                  TOTAL-AUTH:     24          TOTAL-UNFUNDED:      2          TOTAL-ASGN:     18
                                RDUMPR   - PAGE:  22 OF  38 -     (Concurrent request: 943573)
                                                                                    SI075636004
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Figure 2–2. Unit Personnel Manpower Roster (UPMR).

As you can see, manpower is a many faceted issue that encompasses all of the MTF workcenters, manning documents, and workload reports. All this information is used to formulate manpower requirements. You should now have a basic understanding of what goes into manpower authorizations and your manning documents.

Manning Assistance

Sometime in your career, your manning may dip too low to complete your mission due to a deployment, PCS/retirement/separation, or natural disaster. For these instances, you can request manning assistance. You can also use it for a special project, such as an X-ray installation. Manning assistance is designed to be short term (less than 179 days). You will have to justify the need for the manning assistance and your MTF will have to fund the TDY. Information you'll need to include in your request is:

- How many BMETs
- Duration and required start date
- Skill level
- Purpose
- Justification with supporting documents i.e. metrics

Your Resource Management Office (RMO) can help you with the format of the letter. Once your Commander signs off, the request is routed to your MAJCOM, which has the responsibility to fill the manning assistance request from within, if possible. If the MAJCOM is not able to fill the request from available resources, the request goes to AFPC. AFPC then puts out the request to the rest of the Air Force.

Another avenue for obtaining manning assistance is the Reserve Individual Mobilization Augmentee (IMA) program. To request an IMA, you need to start with your Base Reserve Coordinator. If IMAs are not available, the Reserve Coordinator can also get a message sent out to all the traditional Reserve units for voluntary assistance.

If you foresee the need for manning assistance, start the process several months in advance. It could take several weeks (or more) to get the request routed through your chain of command before it is even ready to leave the base.

Manpower Study

What do you do if your shop is at full strength and you are constantly struggling to keep up with the workload? You can request a formal manpower study by the base Manpower and Organization Flight (MOF). The request to the MOF must come from your Commander. Once initiated, a Manpower Team will come to your shop and interview you about your shop's various duties. The only items they can give you "credit" for doing are "official" taskings that originate from Headquarters Air Force level, such as AFIs and policy letters. Taskings from your Medical Group commander and/or your Base Commander are not counted towards your manning. The team will collect workload data in a variety of ways, one of the most important sources being DMLSS management reports.

To assure your manning authorization is adequate, it is imperative that the time you and your shop spends is documented accurately and correctly. You will gain a better understanding of its importance as we go into detail about the MEPRS program as it relates to the BMET shop.

010. Medical expense and performance reporting system (MEPRS)

The scope of the DOD operations dwarfs those of many large corporations and autonomous countries. Obviously, it is critical that leaders at every level have tools capable of assisting them with making those tough financial decisions. For the military treatment facility, MEPRS is that tool.

Purpose and use

The purpose of MEPRS is to report manpower and expense requirements for MTFs. This tri-service resource management reporting system provides a means of comparing MTF costs and productivity to those of the civilian community. By using a common or uniform method, the three military services (Army, Navy, and Air Force) have a way of determining, budgeting, defending, and allocating basic manpower requirements. MEPRS also greatly improves long-range planning.

The chain of command for MEPRS is from the MTF to the DOD Secretary for Health Affairs. MEPRS ensures that each MTF uses a standard process for reporting up the chain. As we discuss MEPRS, we'll use money terms such as "charged" and "salary"; keep in mind that money is not actually changing hands. These terms are used strictly for accounting purposes only. Your MTF takes your salary into consideration when figuring the "bottom line" for healthcare costs; however Defense Finance & Accounting Service is where your paycheck actually comes from, not the MTF.

Using MEPRS data

MEPRS was designed to bring all of the personnel utilization, workload, and expense data into one system. This includes everything from patient visits to pharmacy workload, from radiology expenses to the amount of time you work at the MTF. MEPRS does this by interfacing with many of the computer systems within the MTF which uses data manually input from various sources.

Actual operating budget data is compiled with the information described above. The final product provides an in-depth, detailed picture of the MTF. A MEPRS report can provide leaders with a gamut of information such as the cost of a lab test or the cost incurred to operate a specific clinic. Leaders can also determine how much money was "spent" on personnel salaries or the costs associated with outpatient visits. These examples barely scratch the surface. Eventually, all of the information makes its way up to the DOD where it is inevitably used in the allocation of resources.

If used properly, MEPRS is an excellent expense accounting system that will accurately report expenses for military treatment facilities. The MEPRS accounting system captures three types of MTF data:

- Personnel utilization.
- Workload.
- Expense.

Leaders at all levels can use the captured MEPRS information to accurately plan for future medical endeavors and consistently project requirements within the medical service. Properly reported MEPRS data enables leaders at all levels within the AFMS to reap the following benefits:

- Have an understanding of the costs associated with running an MTF.
- Determine if funds are being spent wisely or determine spending.
- Make cost comparisons with other MTFs or civilian facilities.
- Determine aspects of manpower or personnel utilization.

Medical Group commanders can accurately project funds required for the successful operations of their facilities. They can also focus on workload data to determine trends in specific areas within the MTFs. By analyzing the workload data in conjunction with the personnel utilization data, commanders can hone in on manning issues whether those issues are shortages or overages.

The Surgeon Generals (SG) of major commands can use the MEPRS information submitted by MTFs in a similar fashion, yet their focus will probably be on a bigger picture. They can compare an MTF's MEPRS data to other comparable facilities. They can also use the data to determine trends, set goals, distribute manpower, and budget appropriately. Likewise, other personnel and organizations within the AFMS can use MEPRS data for similar planning.

So, what does all this have to do with you and managing your workcenter? To answer this question you need to know how your workcenter's activities are categorized and how those activities are loaded into MEPRS.

Functional Cost Codes

Most of the individuals within the DOD that have primarily responsibility for managing the MEPRS program are resource managers and other personnel that work with finances. These individuals use the word "activity" to describe a workcenter. These workcenters are represented in MEPRS by individual Functional Cost Codes (FCC). In other words: activity = workcenter = FCC. The FCC in MEPRS serves the same purpose as manpower's Functional Account Code (FAC).

Each workcenter has an operating expense account. Each of these workcenter accounts are designated with a four-letter (FCC), which designates and breaks down the service provided. The first 3 letters are standard to DOD. The 4th letter is MTF specific. By breaking down their services, funds can be

properly distributed to cover operating costs. Each letter making up the FCC represents a different type of account and they are explained below, starting with functional accounts.

Functional accounts – first level

These are the highest levels of accounts in the MEPRS accounts structure. There are seven functional areas in an MTF. They are divided into seven categories designated by a letter A through G. All MEPRS Functional Cost Codes must start with one of these letters—(A) inpatient care, (B) ambulatory care, (C) dental care, (D) ancillary services, (E) support services, (F) special programs, and (G) readiness. Support services accounts described in this section are provided to collect expenses necessary to direct and support the missions assigned to the MTF. Biomedical Equipment Repair is a support service, thus, it is designated with a functional account code of "E." Support service expenses are "charged" directly to the workcenter that benefited from or caused the expense.

Summary accounts – second level

These are the second level accounts within the MEPRS. They are subdivisions of the functional accounts and encompass general areas of care or service within each of the seven functional accounts. MEPRS designates Biomedical Equipment Repair as a summary account with a FCC of "EG."

Workcenter – third level

These are the third level accounts of activity for which costs are accumulated. This level identifies specific workcenters. MEPRS has designated Biomedical Equipment Repair workcenters as "EGA." This FCC is used to document everyday BMET work that can be associated with a particular piece of equipment, account, or WRM. This is the code you will use 99% of the time. However, there are additional codes that you might use that include a fourth level identifier.

Sub-accounts – fourth level

MEPRS uses fourth level FCC codes as special identifiers, and they are MTF unique. Biomedical Equipment Repair is typically identified as "EGAA." Your base could differ, depending on how RMO has your account set up. Check with your RMO office for your shop specific codes.

Responsibilities

On a monthly basis, MEPRS information collected at MTFs located around the world makes its way to the highest levels within the DOD. From the MTF all the way to Air Staff and Health Affairs, key personnel at different levels throughout the MEPRS process have different roles and responsibilities within the program. Let's focus on the individual responsibilities at your MTF.

Medical Group (MDG) commander

Within his or her respective facility, the MDG commander must support the data collection requirements of the MEPRS Program and is responsible for the accuracy of the data reported.

Resource management office (RMO)

The RMO is *primarily* responsible for managing the MEPRS program within the MTF. Personnel within the RMO are the points of contact for MEPRS.

Workcenter MEPRS monitor

The workcenter's MEPRS monitor will compile and review all workcenter data reported to the RMO.

Medical staff members

Medical staff members (to include you) are responsible to ensure the data reported to their workcenter's MEPRS monitor accurately reflects where their time was spent. As a BMET, the data you and your troops put on work orders ultimately ends up in MEPRS.

Collecting and reporting MEPRS data

Regardless of where you are stationed, your shop is required to report workload and personnel utilization data monthly. Your BMET shop and all other sections within your MTF have MEPRS responsibilities. Understanding the process and collection criteria is half the battle. Once this is mastered the rest will be smooth sailing!

As was mentioned earlier in this section, MEPRS is an accumulation of an MTF's expense, workload, and personnel utilization information. To understand how data ultimately becomes a part of MEPRS reports we will break the process down into the three areas of data that are collected: personnel utilization, workload, and expense.

Personnel utilization information

Did you know that approximately 70–75 percent of an MTF's budget is allocated for personnel in the form of salaries? So I'm sure you can imagine that bogus, pencil-whipped personnel utilization data *will* lead to an inaccurate, useless MEPRS report.

To correctly account for the salaries to the personnel assigned to a medical facility, it is necessary for each section to account for their employees and how they spent their time. Medical facilities can collect personnel utilization data through the use of the AF IMT (Form) 3078, Monthly Personnel Time and Salary Distribution Worksheet (fig. 2–3). Some MTFs accomplish this task manually; others have an automated version of the AF IMT 3078. Another method is the use of a "template." While it may seem a lot easier to just have a MEPRS timesheet template set up so you don't have to keep track of every hour, in the long run you will be hurting your shop, especially if you are claiming a full day's work against the "EGAA" shop code. Here is an example of how this could hurt your shop. Let's say you claim a full 8 hours of work and your shop only documented 2 hours time on workorders. This shows 6 hours of unaccounted (wasted) time. Meetings, training, appointments, etc probably ate up the 6 hours. This time should be accurately reflected on the MEPRS timesheet. This is the type of data manpower studies look for.

You might have noticed that your paycheck amount from month-to-month is consistent even though you might have been placed on quarters for a week, outside the MTF on a readiness exercise, assigned to your dorm or the base for a week as part of a clean-up detail, or in some cases assigned to a different department within the MTF for a few days. Because you are assigned to the MTF, MEPRS is designed to track your duties on a month-to-month basis. So, whether you are an available worker in your BMET workcenter or non-available because you are sick or on quarters, MEPRS assigns funds for your salary to the proper FCC in correlation to your performed duties. Your salary is based on available and non-available Full Time Equivalents (FTEs) by FCC code.

Categories of manhours

Manhours are reported in two categories: *available time* and *non-available time*. A partial list of for each category is given below. Circumstances not covered below should be addressed to the RMO MEPRS manager.

Available time includes, but is not limited to:

- Mission-related work (BMET work on or related to equipment).
- In-service education.
- TDY for continuing education (such as schools and symposiums).
- Hospital-related meetings.
- Management of the section (writing EPRs, work schedules, etc.).
- On-call. Time actually spent performing on-call duties. If a person is called to the hospital, reported time starts when the person leaves home and ends when the person returns home.

MONTHLY PERSONNEL TIME AND SALARY DISTRIBUTION WORKSHEET

Reports Control Symbol RCS:

NAME *(Last, First, MI)*: Wrenchturner, Jimmy B.

GRADE: SSgt

OCCUPATION CODE/AFSC: 4A251

SKILL TYPE:

JOB SERIES *(Civilian)*:

SALARY:

WORK CENTER ASSIGN DATE: 20070115

WORK CENTER DEPART DATE:

ASSIGNED WORK CENTER CODE: Biomedical Equipment Repair - EGAA

MTF DEPART DATE:

AVAILABLE HOURS WORKED												NONAVAILABLE TIME		
MONTH May						YEAR 2007								
DAY OF MO.	DAY OF WEEK	ACCT EGAA	ACCT GFAA	ACCT GBAA	ACCT GAAA	ACCT EBAA	ACCT EBCC	ACCT	ACCT	ACCT	ACCT	HOSP	LEAVE	MIL OTH
	SUN													
	MON													
1	TUE	5										2		1
2	WED	6	1											1
3	THU	5		2										1
4	FRI	6	1											1
5	SAT													
	SUBTOTAL WEEK 1	22	2	2								2		4
6	SUN													
7	MON	6	1											1
8	TUE	6				1								1
9	WED	6	1											1
10	THU	7												1
11	FRI	6	1											1
12	SAT													
	SUBTOTAL WEEK 2	31	3			1								5
13	SUN													
14	MON	6	1											1
15	TUE	7												1
16	WED	6	1											1
17	THU	5					2							1
18	FRI	6	1											1
19	SAT													
	SUBTOTAL WEEK 3	30	3				2							5
20	SUN													
21	MON	6	1											1
22	TUE	7												1
23	WED				8									
24	THU				8									
25	FRI				8									
26	SAT													
	SUBTOTAL WEEK 4	13	1		24									2
27	SUN													
28	MON													
29	TUE												8	
30	WED												8	
31	THU												8	
	FRI													
	SAT													
	SUBTOTAL WEEK 5												24	
	GRAND TOTAL HOURS	96	9	2	24	1	2					2	24	16

CHECK BLOCK IF TRANSFER TO THIS ASSIGNED WORK CENTER THIS MONTH ☐

IF CHECKED, TRANSFER FROM WHICH WORK CENTER? _____

CERTIFICATION: HOURS REPORTED ON THIS FORM ARE TRUE AND ACCURATE.

INDIVIDUAL SIGNATURE

AF IMT 3078, 19941101, V2 PREVIOUS EDITION IS OBSOLETE. SI075636005

Figure 2–3. AF Form 3078, Monthly Personnel Time and Salary Distribution Worksheet.

Your RMO MEPRS monitor will give you any additional codes that are used. Commonly used Functional Cost Codes (FCC) for a BMET shop are:

FCC	Description
EGAA	BMET Shop Duties
EDA*	Facility Management
FAL*	Continuing Education, MTF Orientation, Shop In-service Training
FCDA	TDY and manning assist supporting other military medical activities (ANG, AFR, sister services, etc.)
FCEA	Support to Non-DOD Federal Agencies
FCGA	Wing/Base Details/Commander's Calls, In/Out Processing
FDGA	PCS Related time, house-hunting
GAAA	Deployment prep and planning
GBAA	Readiness Training, RSVP
GDAA	Deployment
GFAA	Physical Training during duty hours

Non-available time includes, but is not limited to:

- Leave (only on scheduled duty time).
- Permissive TDY.
- Medical/Dental appointments/quarters.
- Family down days.
- Safety/Wingman Day.
- Personal military matters (MPF/Finance, etc).
- Center officer of the day/NCO of the day.
- Parades.

Workcenter MEPRS monitor responsibilities

Workcenter MEPRS monitors (usually the NCOIC) are responsible for ensuring that each person assigned to a workcenter completes an AF IMT 3078 or equivalent form. An equivalent form can be used and the numbers can be transferred to the AF IMT 3078 at a later date. The workcenter MEPRS monitor should be aware of the requirements and procedures for recording personnel time. This monitor is required to review each AF IMT 3078 for accuracy and internal consistency. The workcenter MEPRS monitor ensures all columns are totaled and that the correct MEPRS codes are used. This review must be completed within three duty days after the end of the month. The workcenter MEPRS monitor then has the person—whose time is reported on the form—validate it. The monitor forwards the AF IMT 3078 to the Resource Management Office (RMO). At this time the workcenter MEPRS monitor also notifies RMO of any departures, arrivals, transfers, or other pertinent data.

Individual responsibilities

Each individual assigned to or working in the MTF from another organization completes AF IMT 3078. Individuals must ensure all information entered on this form is correct. Each individual will return his or her time sheet to the workcenter MEPRS monitor to meet the suspense to the RMO. Accurate accounting of time worked gives you the data that you need to keep your shop appropriately staffed. Don't tie your hands by "pencil whipping" the AF IMT 3078.

Workload information

Through MEPRS, workload information quantifies the amount of work completed by each workcenter within the MTF. Workload data (i.e., hours spent on work orders for each section, outpatient visits, prescriptions, inpatient bed days, etc.) is one part of the statistical basis for assigning costs within MEPRS. Workload data is associated with both patient care and non-patient care

activities. The information is grouped by FCC and reported to the RMO. The collected workload data assigns costs of operating expenses to the various MEPRS accounts.

The *DMLSS Medical Expense and Performance Reporting System (MEPRS) Report*, which can be printed from the Reports section of the DMLSS Maintenance Activity (MA) module, shows the number of hours expended on DMLSS work orders for each section (workcenter). It should be printed monthly and given to the Resource Management Office (RMO). The RMO inputs this data into their Expense Assignment System-IV (EAS-IV) computer system which feeds data to MEPRS.

Expense information

EAS-IV is the system responsible for incorporating *all* of the captured expense, workload, and personnel utilization data into a single report. The RMO uses this system to input each individual timesheet and the data from the DMLSS MEPRS report. Remember, the AF IMT 3078 timesheets, validated template, and DMLSS MEPRS report must be completed and turned in to the RMO by close of business on the third duty day of each month.

011. Maintenance facilities

The Air Force Medical Support Agency, Health Facilities Division (formerly Health Facilities Office) uses the DOD Medical Space Planning Criteria provided by the Portfolio Planning & Management Division of the Tricare Office to compute the space required for MTFs. Boy, that's a mouthful! The space planning criteria is intended for new facilities, but you can use it for justifying existing requirements.

BMET shop space authorizations

Specifically, you can find the space planning criteria for Medical Treatment Facilities under "Logistics" at http://www.tricare.mil/ocfo/ppmd/criteria.cfm. The following table lists the rooms used in a typical BMET shop along with the square footage requirements.

Function	Room Code	Sq/Ft	Planning Range/Comments
Biomedical Officer	OFA01 OFA02	120	One per projected person.
NCOIC/LCPO/LPO Office	OFA01 OFA02	120	One per projected person.
Administrative Cubicles	OFA03	60	Provide one per projected person requiring a dedicated cubicle.
File	FILE1	60	For up to 200-bed facility. Add 5 sq/ft per 100 beds over 200. Where regional responsibilities exist, include beds for satellite activities in computing space.
Reference Library	LIBB1	40	Minimum. Provide 10 sq/ft per technician up to a maximum of 160 sq/ft.
Biomedical Maintenance Shop	BMCW1	150	Minimum. Provide 150 total sq/ft per technician.
Parts Room	SRPS1	80	Minimum. Provide 25 sq/ft per technician up to a maximum of 200 sq/ft.
Equipment Holding Area	SRE01	60	Minimum, or 15 sq/ft per technician maximum of 200 sq/ft. Equipment waiting for parts.

Function	Room Code	Sq/Ft	Planning Range/Comments
Electronics Repair/ Calibration Room	BMER1	140	Minimum. Add an additional 80 sq/ft per additional 100 beds over 200 beds. Plus .002 sq/ft x annual outpatient visits. Where regional responsibilities exist, include beds for satellite activities in computing space required. Space not required for facilities with 3 or less technicians authorized.
Equipment Receiving Area	BMRA1	130	Provide for facilities with at least 200 beds. Add 25 sq/ft per additional 100 beds over 200 beds. Where regional responsibilities exist, include beds for satellite activities in computing space required.

You can find the specific architectural and utility information for each MTF area in the Unified Facilities Criteria (UFC), Appendix A. You can find the UFC at the following Health Facilities Planning Agency website: http://hfpa.otsg.amedd.army.mil/refs/1191/index.asp. This document specifies:

- Floor material and finish.
- Wall material and finish.
- Ceiling height, material, and finish.
- Door size.
- Room noise.
- Floor loading.
- Light level.
- Emergency power.
- Medical gases/vacuum.
- Heating, Ventilation, Air Conditioning (HVAC).

Keep in mind, this criteria is for a “typical” BMET shop. You will need to evaluate your particular situation and customize these requirements. One thing that is not mentioned in Appendix A of the UFC is unique power requirements. Will you need three-phase, 480V power to run an X-ray system in the BMET shop? Probably not. However, you might need single-phase 208/220V power for a refrigerated centrifuge, laser, or other large equipment. When you evaluate your particular situation, pay particular attention to the type of equipment you have in your facility and what you will typically maintain in your shop.

Another utility that is not mentioned in Appendix A of the UFC is plumbing. Though not mentioned, a large counter and sink is needed with special plumbing connections for maintaining equipment such as dental prophy units, hypo/hyperthermia units, blanket warmers, etc. An eyewash station should also be part of your sink area.

Satellite BMET locations

The DOD Medical Space Planning Criteria calls for a Satellite BMET shop in the MTF if the main shop must be located in a detached building. You could also use this criterion in an attempt to justify a Satellite BMET shop in the dental clinic. However, space is usually a very sensitive issue and most clinics are very reluctant to give up any. If you asked the dental clinic for a room to set up a small BMET shop, consider yourself fortunate to gain even a small closet. This is where being a “good salesman” comes in handy. You can explain the benefits of having a BMET shop in their clinic: quicker response times, equipment not leaving their building, etc.

012. Tools and test equipment

Each BMET must be provided with adequate hand tools and shop equipment to perform his or her assigned functions. In addition to each BMET's tool kit, each facility should have an assortment of tools to support the unique job requirements within that facility. These vary from a simple tool board in a small facility to larger machinery in a large facility such as Wilford Hall Medical Center.

Sometimes it may be difficult to decide what tools and equipment are necessary. In the past, BMET shops were authorized tools and equipment through a preset listing called a Table of Allowance (TA). TAs are no longer used for peacetime equipment authorizations; they are now called Allowance Standards and are used for War Reserve Materiel (WRM) authorizations. Certain WRM projects have tool kits authorized to augment issued tool kits. These kits contain the specialized tools used for that specific project.

In most MTFs, the Medical Logistics Flight Commander or Squadron Commander is the approval authority for the equipment and tools purchased by your BMET shop. It is imperative that you be able to justify the need for tools and equipment you order for your BMET shop. Don't abuse the system and order something because it would be "cool" to have; order only what you really need to carry out the mission. It must also be in your budget (which we'll cover in a future lesson). The money for any tool or test equipment item you may buy will come out of the same account you use to buy repair parts, so you don't want to spend all your money on tools and end up short for repair parts. The best time to purchase mission-related (not necessarily mission-essential) items is at the end of the fiscal year, when extra money may be available. Just remember, you are both a taxpayer and a steward of taxpayer dollars.

You should evaluate all equipment requests for any new test equipment that may be needed. Any new test equipment should be ordered at the same time the equipment is ordered, or shortly thereafter. Don't wait until the first work order kicks out before you start the ordering process for supporting test equipment. Failure to obtain necessary test equipment prior to maintenance needs will cause calibration delays and unnecessary contract costs.

Another consideration in this area is safety equipment and personal protective equipment (PPE). There are many types of safety equipment available. Various AFOSH standards describe safety equipment requirements for specific types of jobs and equipment. An example is electrical safety equipment needed for certain high voltage applications. AFOSH standards and local safety office guidance should be used to determine specific safety equipment requirements in each maintenance facility. One item required for all locations is some type of emergency eye wash station. The eye wash station is needed because your facility is using a number of chemicals and performs maintenance on batteries used in shop equipment and equipment being repaired by your shop. All BMETs should have electrical safety boots with reinforced toes issued to them from the base Individual Equipment Unit and charged to the MTF per AFI 41–209 *Medical Logistics Support*, Chapter 1. In a "perfect" world, you would have all the manpower, tools, space, and knowledge to work on every piece of equipment in your facility. Unfortunately, this is very seldom the case. In some instances, it is more cost effective to contract some or all maintenance on certain items than to purchase the equipment and tools necessary for your BMET shop to assume that maintenance responsibility.

Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

009. Managing manpower

1. Briefly describe the chain of responsibility for allocating personnel to your base.

2. Match each manpower term in column B with the definition in column A. Items in column B may be used once, more than once, or not at all.

Column A	*Column B*
____ (1) Generated by MilPDS.	a. Air Force Manpower Standard (AFMS).
____ (2) Controlling document for shop manning.	b. Directorate of Manpower and Organization.
____ (3) Contains names assigned against specific manpower authorizations.	c. Workcenter.
____ (4) Primary management tool for determining manpower authorizations and requirements.	d. Functional Account Code (FAC).
____ (5) Identified by Functional Account Code.	e. MAJCOM.
____ (6) Obtained from DMLSS and MEPRS reports.	f. Workload.
____ (7) Organizational section with unified purpose.	g. MERC additive.
____ (8) Allocates programmed manpower resources to MAJCOMs.	h. Unit Manning Document (UMD).
____ (9) Should be routinely reviewed.	i. Unit Personnel Manpower Roster (UPMR).
____ (10) Amount of work expected from a technician in a given period of time.	j. Manpower and Organization Flight (MOF).

3. What data is shown on the Unit Manning Document (UMD)?

4. Why should you routinely review the Unit Personnel Manpower Roster (UPMR)?

5. What must be included in a manning assistance request?

6. Who has the primary responsibility for providing manning assistance to you?

7. In a manpower study, what duties does your shop get “credit” for performing?

010. Medical expense and performance reporting system (MEPRS)

1. What is the purpose of the Medical Expense and Performance Reporting System (MEPRS)?

2. What type of data does the Medical Expense and Performance Reporting System (MEPRS) capture?

3. How does Medical Expense and Performance Reporting System (MEPRS) data benefit leaders?

4. What Functional Cost Code is typically assigned for Biomedical Equipment Repair?

5. Who manages the Medical Expense and Performance Reporting System (MEPRS) program for the MTF?

6. What types of work are considered as “available time”?

7. What is the Functional Cost Code (FCC) for Physical Training during duty hours?

8. What types of work are considered “non-available time”?

9. What workload report do you provide to the RMO Medical Expense and Performance Reporting System (MEPRS) monitor every month?

10. What data does that report provide?

11. What computer system is used to input the individual timesheets and the data from the DMLSS MEPRS report?

011. Maintenance facilities

1. What is used to compute the space required for Medical Treatment Facilities (MTFs)?

2. What document contains specific architectural and utility information for each Medical Treatment Facility (MTF) area?

   2a. What specific data is contained in that document?

   2b. What data is *not* mentioned in that document?

012. Tools and test equipment

1. Who is the approval authority for tools and equipment in your BMET shop?

2. How can you ensure that MTF resources are not wasted on unnecessary items for your shop?

3. What should you use to determine the need for safety equipment?

4. Where can you find the requirement for electrical safety boots with reinforced toes?

2–2 Managing Shop Administration

One of the most important aspects of your job is documenting maintenance and repair actions. The seemingly endless tasks of documentating maintenance, drafting correspondence, performing quality control inspections, and filing maintenance records are vital parts of the overall maintenance support of your facility. This documentation certifies that the scheduled maintenance was performed, malfunctions were corrected, or issues affecting the equipment, MTF, or your shop have been addressed. Documentation comes in many forms such as calibration forms, work orders for scheduled or unscheduled maintenance, letters, or inspection results which affect the operation of your maintenance program. By far, the most widely used form of documentation is the Defense Medical Logistics Standard Support (DMLSS) computer system.

Maintenance documentation is a key element in the biomedical equipment maintenance program. There are many occasions when records are required to support your maintenance program. Some examples are Health Services Inspection (HSI), The Joint Commission, or Accreditation Association for Ambulatory Health Care (AAAHC) inspections. In these cases, your unit and the Air Force depend on your program to enhance the unit's overall rating. Your records may serve as a historical file that helps solve a chronic malfunction in a piece of equipment, or they may be used by medical logistics to support equipment replacement planning. In the event of an incident involving a piece of equipment, they could be required to support the MTF's position in litigation. You can see from these examples why the completeness and accuracy of this documentation is so important. This section covers various forms of documentation as well as some general administrative procedures required for the operation of a biomedical equipment maintenance program.

You may be the best BMET in the Air Force and have the best technicians working for you, but if your documentation is poor, then the whole biomedical maintenance program will suffer.

013. Historical maintenance records & data quality

Since the implementation of MEDLOG in the 1980s, one of the recurring problems has been the accuracy of the information within the medical logistics system. The Y2K effort showed us some glaring problems with spelling (128 variants for "General Electric"). With the implementation of DMLSS a large number of problems have been eliminated and some new ones created. In order to get control of this problem, AFMSA /SGSL has initiated a strategic initiative to improve the quality of the data within the medical logistics community. With oversight of over 1 billion dollars in total equipment assets, the Clinical Engineering Branch is at the forefront of the Data Quality initiative.

Purpose of the data quality initiative

The purpose of the data quality initiative is centered around four primary objectives:

1. Patient Safety.
2. Improve asset visibility.
3. Ensure compliance with all applicable laws and regulations (e.g. SMDA, FDA).
4. Optimize the use of limited equipment dollars.

In fulfilling these objectives not only do we improve efficiency, we will raise the quality and safety of medical care provided to our beneficiaries.

Locating data quality problems

The Data Quality graph in Figure 2–4 was taken directly from the Clinical Engineering Branch website. In this graph, bigger is ***NOT*** better. It shows the quantity of equipment records having questionable data associated with them. This figure groups records by MAJCOM so we can see where we can focus our improvement efforts. Notice that the tallest bars on the chart fall under AFELM which stands for Air Force Element (WRM equipment), so we can skip that. This is due to the new WRM equipment records not being updated at the time the data was gathered. The next highest bars on the chart are aligned with Air Mobility Command (AMC). On the website, when you click on the bar graph for each command, it will "drill down" to another graph showing all the accounts (bases) under that command. It is very user friendly.

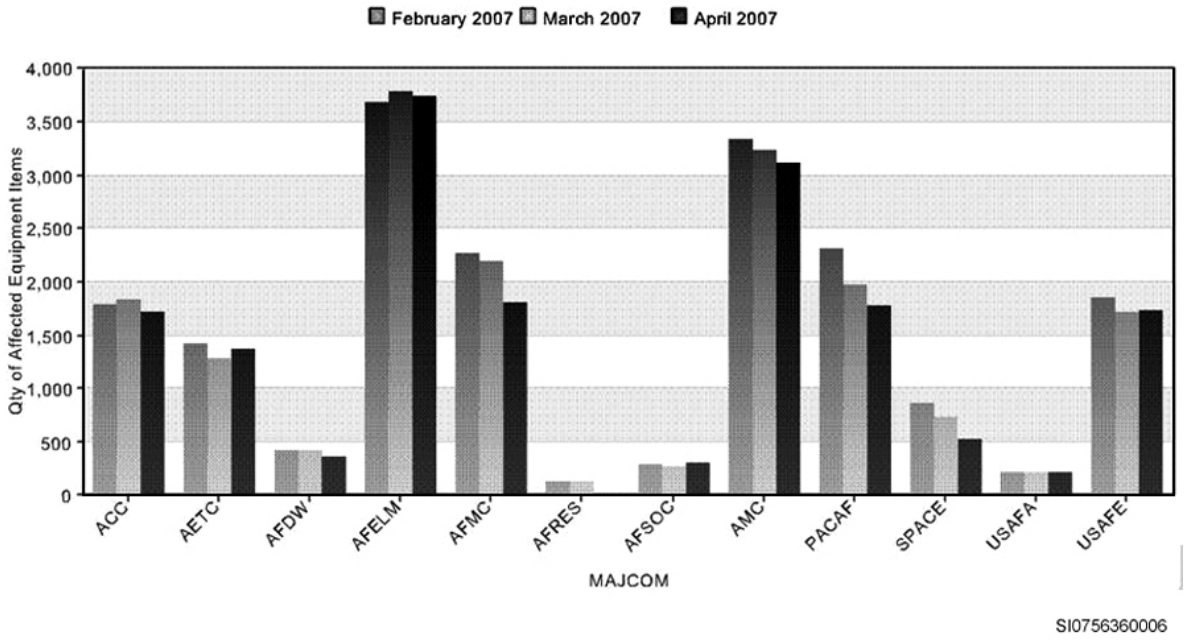

Figure 2–4. Data Quality Graph.

Figure 2–5 shows all the AMC bases. You'll immediately notice that FM4484 (McGuire AFB) has over 800 items with data quality issues. Another click on that account will drill down further to show a spreadsheet with flagged data elements for specific equipment items having data quality issues.

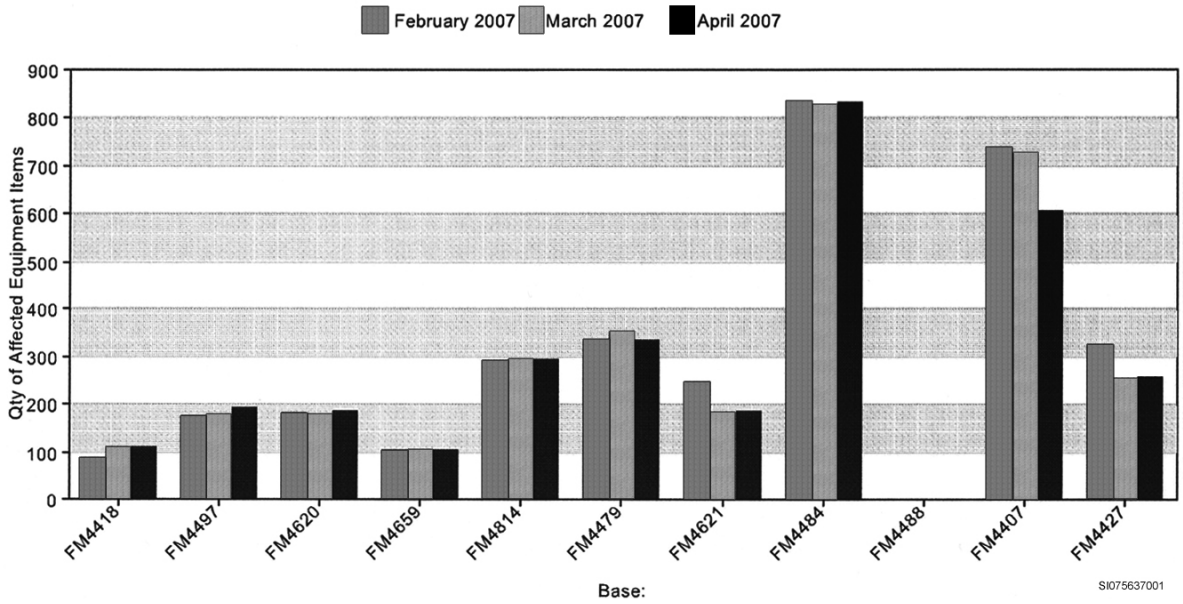

Figure 2–5. Air Mobility Command Data Quality.

Figure 2–6 is a screen capture of the McGuire AFB spreadsheet. These are just a few of the 834 items that need attention. This is not presented to point fingers or embarrass anyone; it is an example using real data (as of May 2007). Keeping equipment records accurate takes effort and should be on the forefront of everyone's mind every time you look in DMLSS. *Everyone* is responsible to attain the goal of having zero items with data quality discrepancies.

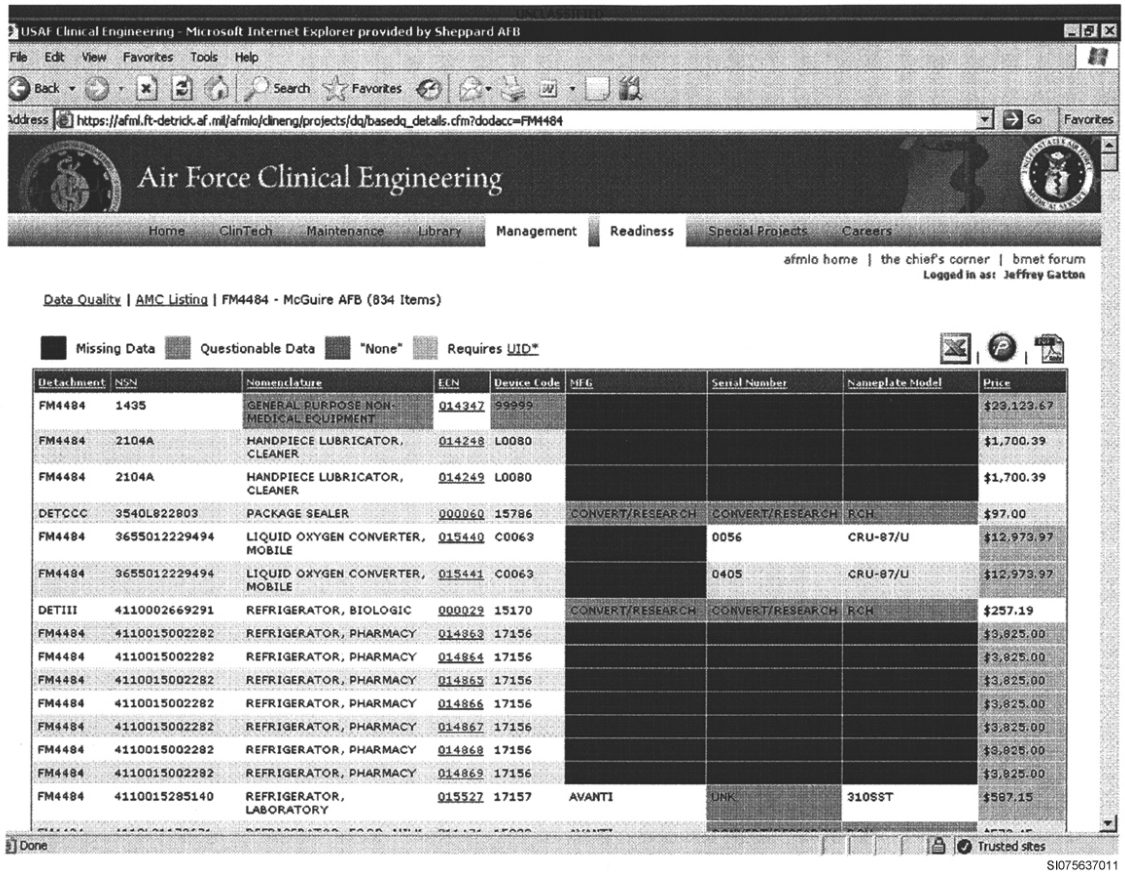

Figure 2–6. McGuire AFB Data Quality.

Key Data Elements

Now that we have learned how to find the items for a particular base, we will go over the specific elements in the equipment record that are critical for data quality.

Item ID

The Item ID, formerly the NSN field in MEDLOG, is intended to be a standardized number used for all like items. AFI 41–209 specifies what should be entered in this field, but for equipment items, we are recommending only the following three options:

- The National Stock Number of the Item.
- A derived NSN using the stock class of the item (like the old MEDLOG days).
- The manufacturer's specific part number/catalog number for an item (not the common model).

Device Nomenclature

The device nomenclature defines what the device is and what type of maintenance is performed. Nothing in the Air Force Medical Service inventory is General Purpose. In the past, maintenance was directly associated with the Device Code and although this is still true, DMLSS was designed to use the standardized nomenclature as the driver and not the number. A majority of the nomenclatures are taken directly from the ECRI Institute Universal Medical Device Nomenclature System (UMDNS) and have been filtered by the Services. Additional centrally managed nomenclatures are added to the system based on Service specific requirements and requests from the field.

Manufacturer

This is the name of the company that received approval from the Food and Drug Administration (FDA) to market the device, also referred to as the OEM (Original Equipment Manufacturer). This is NOT the distributor that sold the equipment to your MTF or the manufacturer of the components used within the system (e.g. Dell does not manufacture a PACS System, but may manufacture one of the components and should not be entered as the manufacturer).

Common Model

This is the model typically placed on the front of the equipment or on the cover of the service manual and is provided by the OEM. Examples include "Lifepak 12" or "M Series CCT." In the event a model is further sub-categorized, the expanded common model must be entered. The best example of this is the Lifepak 10 (10–41, 10–43, 10–47, 10–51, and 10–57). This is not a mandatory field, but an System Change Request (SCR) has been submitted to make it mandatory. Repair parts, literature, and other crucial data are linked to this data field.

Nameplate Model

This is the model number on the data plate typically found on the back or underside of the device. In some cases, this matches the catalog number or, in very limited cases, this can be the same as the common model. An example would be 804200–59 (the common model is Lifepak 10–59).

Serial Number

This number, typically found on the data plate as well, is a serialized number (may contain alpha characters) provided by the manufacturer. This number is crucial to device alerts and recalls. For non-medical items maintained in DMLSS that do not have a serial number on them, the Equipment Control Number (ECN) should be used. The format must be ECNxxxxxx (x's being the actual ECN). **Do NOT create local serial numbers.**

Device Type

In DMLSS there are three device types; Individual, System, and Component.

- **Individual** – This is a stand alone device that has no accountable components associated with it that are required for the device to operate correctly. Examples include a defibrillator, vital signs monitor, or infusion pump.
- **System** – This is typically a large item that has several components associated with it that are integral to the proper operation or purpose of the system. Examples include PACS, X-ray units, or central patient monitoring. For equipment with an acquisition price of $100,000 or more, the system must reflect the total acquisition cost (see below).
- **Component** – A component is any major piece of a system that is integral to the proper operation or purpose of the system. Examples include X-ray tables, cardiac monitors (as part of the central monitoring system), and ultrasound transducers. Components in DMLSS must have an associate system ECN. For systems over $100,000, all components must be gained at a cost of $0.00. This has to do with the way DMLSS handles depreciation.

Acquisition Cost

This is the total price paid for an individual item or system. This cost must include installation, shipping, and other associated costs. These costs must be entered separately in the appropriate fields within DMLSS. The values are crucial for budgeting, allowed maintenance expenditures, and depreciation reporting.

Condition

Condition is the code primarily used when an item is turned into DRMO and should be changed when there are major changes to the system that could effect whether or not an item should be salvaged, destroyed, or used by another MTF.

Maintenance Assessment

Maintenance Assessment is the objective evaluation of the device by the last maintenance technician to see the item during scheduled or unscheduled maintenance. This assessment must be validated every time a BMET performs maintenance on an item.

Unique Identification (UID)

UID is a DOD initiative to identify all the assets owned by the DOD in order to provide Congress and the American taxpayer a better idea of where their money is being spent. *Data Quality is key to this initiative.*

Beginning 1 November 2006, as part of the build 126 DMLSS update, all legacy equipment meeting the UID requirement will have a virtual Unique Item Identifier (UII) assigned. This UII will be based on the manufacturer's Data Universal Numbering System (DUNS) number or Commercial Activity/Government Entity (CAGE) code, the nameplate model number, and the serial number. The combination of these three data elements should provide a globally unique UID. However, the current state of our data will cause thousands of errors to be generated. It is imperative that we begin to cleanup the data **NOW**.

What requires a UID?

The criteria for items requiring a UID is simple. First and foremost, any item costing in excess of $5000 must have a UID. Second, all serially controlled items require a UID. And third, all controlled items (e.g. Secure Telephone Units) must have a UID. Additionally, program managers may require other items be assigned a UID. This last category will have the greatest impact on the MTF. The Clinical Engineering Branch is the program manager for the UID initiative within the AFMS as it relates to equipment. Although the other Services may not be as diligent in their compliance with the UID program, Air Force BMET personnel must continue to strictly apply UID policy. Currently, regardless of cost, our criteria are:

- For equipment that has been approved for use by the FDA and has been assigned a serial number by the manufacturer, we will require a UID.
- For non-medical assets, we will evaluate their application. If it is in WRM and provides a mission critical function (e.g. power, HVAC, etc) it will require a UID.
- Constantly check for additional UID business rules at your location since they are currently being developed.

014. Records management & routine correspondence

Although generating and managing paper work may seem like the least desirable portion of BMET responsibilities, it is absolutely crucial that managers exercise great care to properly file and retrieve critical documents. Failure to develop and apply a well designed file plan for correspondence generated in (and flowing through) your section can bring down an entire inspection and will eventually marginalize the effectiveness of your entire maintenance program.

Records Management and File Plans

What do you do with all that correspondence, data, and paperwork created on a daily basis in your shop? Believe it or not, there is a method to the madness of keeping up with all the paperwork, e-mails, and electronic documents generated by your shop. There is specific guidance on what to do and how long you have to keep all those items. It is called the Records Management program. Records are required to be maintained by military, civilians *and* contractors. This lesson will familiarize you with Records Management, file plans, and drafting routine correspondence.

What exactly is a record? "…all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data in them. Library and museum material made or acquired and preserved solely for reference or exhibition purposes, extra copies of documents preserved only for convenience of reference, and stocks of publications and of processed documents are not included." (Title 44 U.S.C., *Public Printing and Documents*, Chapter 33, *Disposal of Records*, Section 3301, *Definition of records*).

Why do we need efficient records management? Records play a vital role in managing and operating Air Force activities. They serve as the memory of the organization, a record of past events, and the basis for future actions. Records managed systematically are complete, easily accessible, and properly arranged to serve current and future management needs and enhance effectiveness and economy of operations.

Policy concerning concealment, removal, and mutilation of records is covered in Title 18, U.S.C. 101, Part 2071. As written, this policy states, "Whoever willfully and unlawfully conceals, removes, mutilates, obliterates, or destroys, or attempts to do so, or, with intent to do so takes and carries away any record, proceeding, map, book, paper, document, OR other thing, filed or deposited with any clerk or officer of any court of the United States, or in any public office, or with any judicial or public officer of the United States, shall be fined not more than $2,000 or imprisoned not more than three years or both."

Records Management Job Descriptions

There are several key players involved with the Records Management program, and each has unique set of responsibilities (including yourself). For additional guidance regarding responsibilities in the records management system, refer to AFI 33-322.

Records Manager (RM)
The RM administers the base program. Their duties fall into three major areas: providing assistance, managing staging areas, and training. They are also appointed as base Freedom Of Information Act (FOIA) and Privacy Act (PA) managers.

Functional Area Records Manager (FARM)
Each base-level unit within an Air Force organization appoints a FARM. One or more FARMs may be required based on the span of control, the complexities of the mission, and the size of the organization's functional areas. Where a MAJCOM-approved electronic records management process or application has been implemented, a designated Client Support Administrator (CSA) may perform a combination of FARM and records custodian duties.

Chief of an Office of Record (COR)
The COR is responsible for physical and legal custody of all records the office creates or receives, regardless of their physical characteristics, including identifying appropriate disposition authorities for records the office maintains.

Records Custodian (RC)
This is the level for which you or someone in your shop will be responsible. The RC maintains, services, and disposes of the office records. RCs must learn the functional mission of the office of record that the records support and know the purposes the records serve. The RC:

- Maintains the office file plan and accountability for active and inactive records.
- Ensures eligible records are promptly and properly prepared to retire or transfer.
- Must be proficient on the equipment used for storing and retrieving the records from the files.
- Knows and implements the records maintenance, use, and disposition policies and procedures for records maintained.
- Adjusts office records maintenance practices to provide accurate and effective reference service to the users of the records.
- Consults with the COR, and when necessary with the FARM, on problems that affect creating, maintaining, using, and disposing of records.

File Plan
A File Plan is used to identify all official records kept in an office. The Air Force Records Information Management System (AFRIMS) is the mandatory AF-wide system that provides AF records managers at all levels of organization an on-line, real-time system to manage and prepare file plans and associated records management products. AFRIMS also provides real-time access and management of the Air Force Records Disposition Schedule (RDS). AFRIMS is used at the office of record level to enable RMs, CORs, and RCs the capability to create a file plan, create disposition control labels and file folder labels, manage a staging area, track staff assistance visits (SAVs) and the training schedule. File plans also include electronic files and e-mails. There are specific requirement on how to set up electronic files, such as a shared network drive.

Some common documents that a BMET shop generates that should be included in a file plan are:

- Work orders and other equipment related documents.
- Maintenance contracts.
- MERC trip reports.
- Management assistance visit reports.
- Appointment letters.
- Government Purchase Card (GPC) documentation.

- Competency folders.

Contractor Records

Records management oversight of a contractor's records is necessary to ensure all Air Force record-keeping requirements are met. Agencies or organizations initiating contracts must coordinate them with the applicable command or base RM. Background electronic data and records specified for delivery to the contracting agency must be accompanied by sufficient technical documentation to permit the Air Force to use the data. A deferred ordering and delivery data clause should be included in the contract to acquire any data and records that may have value to the Air Force but were not identified in advance. Contracts must list records management instructions and directives for contractor compliance. You'll get more detail on contracts in the next volume.

Records Custodian training is available to you at the local level. Ignorance is no excuse for not having a file plan and failing to properly maintain your shop's electronic and paper files. It is up to you to contact your MTF's Functional Area Records Manager (FARM) to receive this training. They can also help you set up a file plan or answer any specific questions you may have.

Preparing Routine Correspondence

As a manager of a BMET shop, you will have daily correspondence of all types at all levels. AFH 33–337, *The Tongue and Quill*, is your guide for preparing all types of correspondence. When writing correspondence, it is a good idea to have someone else proofread what you have written before routing it.

E-mail

E-mail is an excellent means of communication in today's Air Force. It is quick, easy, and instantaneous. You have to be careful because it can get you in trouble just as easily. Sure, you can easily drop the base commander an e-mail, but proper protocol must still be followed just as if you were routing paper. AFI 33–119, *Air Force Messaging* covers e-mail usage. Your MAJCOM and/or base could also have an instruction covering e-mail policy. One thing to always remember when sending e-mails is that they are easily forwarded. Don't write something in an e-mail that you wouldn't want your mother (or commander) to see.

You should have an organized personal folder (.pst) where you can save official messages. When sending messages, you may want to include yourself as a Cc (courtesy copy) recipient so you'll have a record of what and when something was sent. Historical e-mails can come in handy, even years later. If an e-mail message falls into the "official record" category, be sure to save a copy in the appropriate electronic file.

Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

013. Historical maintenance records & data quality

1. What is the purpose of the Data Quality initiative?

2. What is the benefit of the Data Quality initiative?

3. Describe the process to find out the equipment items you have with data quality issues.

4. What is the goal of the data quality?

5. Who has the responsibility for maintaining data quality?

6. Match each manpower term in column B with the definition in column A. Items in column B may be used once, more than once, or not at all.

Column A	*Column B*
____ (1) A unique serialized number found on data plate.	a. Item ID.
____ (2) Model found on the data plate with serial number.	b. Device Nomenclature.
____ (3) Used when item is turned into DRMO.	c. Manufacturer.
____ (4) Objective evaluation by last maintenance technician.	d. Distributor.
____ (5) Defines what the device is and what type of maintenance is required.	e. Common Model.
____ (6) Standardized number used for all like items.	f. Nameplate Model.
____ (7) Model typically found on the front of the equipment.	g. Serial Number.
____ (8) Must be assessed/validated every time a BMET performs maintenance.	h. Device Type.
____ (9) Includes individual, system, or component.	i. Individual.
____ (10) Name of company that received FDA approval.	j. System.
____ *(11)* Total price paid.	k. Component.
	l. Acquisition Cost.
	m. Condition.
	n. Maintenance Assessment.
	o. Unique Identification (UID).

7. What is the purpose of the Unique Identification (UID) initiative?

8. What three data elements make up the UID?

9. What items are required to have a UID?

10. Who is the UID program manager for the Air Force Medical Service?

014. Records management & routine correspondence

1. Who is required to maintain records?

2. What purpose do records serve?

3. What is the penalty for willful concealment, removal, or mutilation of official records?

4. What Records Management duty could you or someone in your shop perform?

5. What program does the Air Force use to create and maintain a file plan, and what are the capabilities of this program?

6. What common documents does your shop produce that should be included in your file plan?

7. How can you ensure that a contractor complies with Records Management requirements?

8. What is the guide you use to prepare all types of correspondence?

Answers to Self-Test Questions

009

1. The Directorate of Manpower and Organization (HAF/A1M) allocates programmed manpower resources to the MAJCOMs who, in turn, direct implementation of approved programs. The MAJCOMs translate the manpower resources into manpower authorizations by updating the Manpower Programming and Execution System (MPES) by organization, AFSC, grade, etc.
2. (1) i.
   (2) h.
   (3) i.
   (4) a.
   (5) c.
   (6) f.
   (7) c.
   (8) b.
   (9) h/i.
   (10) f.
3. It reflects the unit's total manpower authorizations for both civilian and military, funded and unfunded. It shows authorized AFSCs, skill levels, grades, position numbers, and future Fiscal Year (FY) manning levels for each workcenter
4. To ensure personnel are assigned to the correct position numbers, AFSCs, grade authorizations, and special experience identifiers (SEI).
5. How many BMETs, duration and required start date, skill level, purpose, and justification with supporting documents i.e. metrics.
6. Your MAJCOM.
7. Only "official" taskings that come from Headquarters Air Force level, such as AFIs and policy letters.

010

1. To report manpower and expense requirements for MTFs; this tri-service resource management reporting system provides a means of comparing MTF costs and productivity to those of the civilian community.
2. Personnel utilization, workload, and expense.

3. Leaders at all levels can use the captured MEPRS information to accurately plan for future medical endeavors and consistently project requirements within the medical service. MEPRS data helps leaders to gain an understanding of the costs associated with running an MTF, determine if funds are being spent wisely or determine spending, make cost comparisons with other MTFs or civilian facilities, and determine aspects of manpower or personnel utilization.
4. EGAA.
5. Resource Management Office (RMO).
6. (1) Mission-related work (BMET work on or related to equipment).
   (2) In-service education.
   (3) TDY for continuing education (such as schools and symposiums).
   (4) Meetings that are hospital-related.
   (5) Management of the section (writing EPRs, work schedules, etc.).
   (6) On-call.
7. GFAA.
8. (1) Leave (only on scheduled duty time)
   (2) Permissive TDY
   (3) Medical/dental appointments/quarters.
   (4) Family down days.
   (5) Safety/Wingman Day.
   (6) Personal military matters (MPF/Finance, etc).
   (7) Center officer of the day/NCO of the day.
   (8) Parades.
9. DMLSS Medical Expense and Performance Reporting System (MEPRS) Report.
10. Number of hours expended on DMLSS work orders for each section (workcenter).
11. Expense Assignment System (EAS-IV-i)

011

1. DOD Medical Space Planning Criteria.
2. Unified Facilities Criteria (UFC).

2a. (1) Floor material and finish.
   (2) Wall material and finish.
   (3) Ceiling height, material, and finish.
   (4) Door size.
   (5) Room noise.
   (6) Floor loading.
   (7) Light level.
   (8) Emergency power.
   (9) Medical gases/vacuum.
   (10) Heating, ventilation, air conditioning (HVAC).

2b. Unique power requirements and plumbing.

012

1. From the Medical Logistics Flight Commander or Squadron Commander.
2. Justify the need for tools and equipment you order. Don’t abuse the system and order something because it would be “cool” to have; order only what you really need to carry out the mission.
3. AFOSH standards and local safety office guidance.
4. AFI 41–209, Medical Logistics Support, Chapter 1.

013

1. (1) Patient safety.
   (2) Improve asset visibility.
   (3) Ensure compliance with all applicable laws and regulations (e.g. SMDA, FDA).
   (4) Optimize the use of limited equipment dollars.
2. Improve efficiency and raise the quality and safety of medical care provided to beneficiaries.
3. On the Clinical Engineering Branch website, locate the Data Quality graph. Click on your MAJCOM, another graph will open with all the bases in your MAJCOM. Locate your base by FM, then click on that part of the graph. That will open a spreadsheet with specific equipment items with data quality issues.
4. To have zero items with data quality discrepancies.
5. Everyone!
6. (1) g.
   (2) f.
   (3) m.
   (4) n.
   (5) b.
   (6) a.
   (7) e.
   (8) n.
   (9) h.
   (10) c.
   (11) l.
7. To identify all the assets owned by the DOD in order to provide Congress and the American taxpayer a better idea of where their money is being spent.
8. Manufacturer's DUNS number or CAGE code, the nameplate model number, and the serial number.
9. Items costing in excess of $5000; all serially controlled items; all controlled items; items that program managers may additionally require.
10. Clinical Engineering Branch.

014

1. Military, civilians *and* contractors.
2. They serve as the memory of the organization, a record of past events, and the basis for future actions.
3. Up to $2,000 fine and/or three years in prison.
4. Records Custodian (RC).
5. Air Force Records Information Management System (AFRIMS); it is used at the office of record level to enable RMs, CORs, and RCs the capability to create a file plan, disposition control labels and file folder labels, manage a staging area, and track staff assistance visits (SAVs) and the training schedule.
6. (1) Work orders and other equipment related documents.
   (2) Maintenance contracts.
   (3) MERC trip reports.
   (4) Management assistance visit reports.
   (5) Appointment letters.
   (6) Government Purchase Card (GPC) documentation.
   (7) Competency folders.
7. Contracts must list records management instructions and directives.
8. AFH 33–337, *The Tongue and Quill*.

Unit Review Exercises

Note to Student: Consider all choices carefully, select the *best* answer to each question, and *circle* the corresponding letter. When you have completed all unit review exercises, transfer your answers to ECI (AFIADL) Form 34, Field Scoring Answer Sheet.

Do not return your answer sheet to AFIADL.

28. (009) Who serves as liaison for manpower issues between the Medical Treatment Facility (MTF) and MAJCOM Manpower and Organization staff?
    a. Resource Management Office (RMO).
    b. MAJCOM Manpower Liaison (MML).
    c. Manpower and Organization Flight (MOF).
    d. Air Force Medical Logistics Office (AFMLO).

29. (009) Which Air Force Manpower Standard (AFMS) identifies the minimum essential manpower required for all Medical Logistics and includes BMET shops?
    a. 3350.
    b. 5033.
    c. 5330.
    d. 5530.

30. (009) A workcenter is identified by a
    a. Career Progression Group (CPG).
    b. Functional Account Code (FAC).
    c. Unit Manning Document (UMD).
    d. Medical Expense and Performance Reporting System (MEPRS).

31. (009) The Unit Manpower Document (UMD) shows all of the following, *except*
    a. Air Force Specialty Code (AFSC).
    b. personnel names.
    c. skill level.
    d. grade.

32. (009) What information on the Unit Personnel Manpower Roster (UPMR) is *not* reflected on the Unit Manning Document (UMD)?
    a. Personnel names only.
    b. Projected gains and losses only.
    c. Projected gains, losses, and personnel names only.
    d. Projected gains, losses, separations, and personnel names.

33. (009) Which duty section assigns new arrivals to authorized positions on the Unit Personnel Manpower Roster (UPMR)?
    a. Medical Logistics.
    b. Biomedical Engineering.
    c. Commander’s Support Staff.
    d. Resource Management Office (RMO).

34. (009) Which step should be accomplished *first* when reviewing the Unit Personnel Manpower Roster (UPMR)?
    a. Ensure personnel skill levels are correct.
    b. Look for mismatched data, which is flagged by an asterisk.
    c. Ensure all personnel assigned are listed and names are spelled correctly.
    d. Ensure the position numbers match the Unit Manning Document (UMD).

35. (010) Which account does the *first* letter of every Functional Cost Code (FCC) represent?
    a. Workcenter account.
    b. Functional account.
    c. Summary account.
    d. Sub-account.

36. (010) Who is primarily responsible for managing the Medical Expense and Performance Reporting System (MEPRS) within the Medical Treatment Facility (MTF)?
    a. Medical Group Commander.
    b. Resource Management Office.
    c. Personnel and Administration Flight.
    d. Medical Support Squadron Commander.

37. (010) On average, what percentage of a Medical Treatment Facility's budget is allocated for personnel in the form of salaries?
    a. 50–55%.
    b. 60–65%.
    c. 70–75%.
    d. 80–85%.

38. (010) In the Medical Expense and Performance Reporting System (MEPRS), what time category would you use to report time spent at a meeting for Environment of Care/Safety?
    a. Official time.
    b. Military time.
    c. Available time.
    d. Non-available time.

39. (010) In the Medical Expense and Performance Reporting System (MEPRS), what time category would you use to report time spent going to the Military Personnel Flight (MPF) to make changes to your Servicemembers' Group Life Insurance (SGLI)?
    a. Official time.
    b. Military time.
    c. Available time.
    d. Non-available time.

40. (010) Who is responsible for ensuring that each person assigned to a workcenter completes an AF IMT 3078 or equivalent form?
    a. Each individual.
    b. Flight superintendent.
    c. Workcenter MEPRS monitor.
    d. Medical Treatment Facility (MTF) Medical Expense and Performance Reporting System (MEPRS) monitor.

41. (010) Into what system does the Medical Treatment Facility (MTF) Medical Expense and Performance Reporting System (MEPRS) Program Manager input data from the AF IMT 3078, Time and Salary Distribution Worksheet?
    a. Expense Assignment System-IV (EAS-IV).
    b. Defense Medical Logistics Standard Support (DMLSS).
    c. Defense Eligibility Enrollment Registration System (DEERS).
    d. Medical Expense and Performance Reporting System (MEPRS).

42. (011) What is used to calculate space requirements for new Medical Treatment Facilities?
    a. Unified Facilities Criteria (UFC).
    b. Historical data and unique requirements.
    c. Defense Medical Logistics Standard Support (DMLSS).
    d. Department of Defense (DOD) Medical Space Planning Criteria.

43. (011) Where can you find medical gas/vacuum authorizations for specific Biomedical Equipment Technician (BMET) shop rooms?
    a. Unified Facilities Criteria (UFC).
    b. AFI 41–201, Managing Clinical Engineering Programs.
    c. Defense Medical Logistics Standard Support (DMLSS).
    d. Department of Defense (DOD) Medical Space Planning Criteria.

44. (011) What can you use to justify a Satellite Biomedical Equipment Technician (BMET) shop in the Medical Treatment Facility (MTF) if the main shop must be located in a detached building?
    a. Unified Facilities Criteria (UFC).
    b. AFI 41–201, Managing Clinical Engineering Programs.
    c. Defense Medical Logistics Standard Support (DMLSS).
    d. Department of Defense (DOD) Medical Space Planning Criteria.

45. (012) What is used to justify tools and test equipment for a Biomedical Equipment Technician (BMET) shop?
    a. Mission requirements.
    b. Table of Allowance (TA).
    c. Allowance Standards (AS).
    d. AFI 41–201, Managing Clinical Engineering Programs.

46. (012) What directive requires Biomedical Equipment Technicians to have electrical safety boots with reinforced toes issued to them from the base Individual Equipment Unit and charged to the Medical Treatment Facility (MTF)?
    a. AFI 41–201, *Managing Clinical Engineering Programs.*
    b. AFI 41–203, *Electrical Safety in Medical Treatment Facilities*.
    c. AFI 41–209, *Medical Logistics Support*.
    d. AFOSHSTD 91–8, *Medical Facilities.*

47. (013) What is the *impact* of fulfilling the objectives of the Data Quality initiative?
    a. Proper cataloging of Air Force biomedical test equipment.
    b. Increased visibility of data entry errors at each Air Force Medical treatment facility (MTF).
    c. Improved efficiency and increased quality and safety of medical care.
    d. Improved accuracy in tracking equipment depreciation and justifying replacement costs.

48. (013) Who is responsible for attaining the goals of the Data Quality initiative?
    a. Everyone.
    b. Senior BMET.
    c. Medical Logistics Flight Commander.
    d. Clinical Engineering Branch personnel.

49. (013) The following criterion is used for Unique Identification (UID) requirements, *except*
    a. all serially controlled items.
    b. any item costing in excess of $5000.
    c. all controlled items (e.g. Secure Telephone Units).
    d. all non-disposable items used in medical treatment facilities.

50. (014) Who is required to maintain records?
    a. Military only.
    b. Contractors only.
    c. Military, civilians, and contractors.
    d. Military and civil service employees only.

51. (014) What is the maximum penalty for willfully and unlawfully destroying records?
    a. Article 15.
    b. Courts Martial.
    c. Fine of $3000 and two years in prison.
    d. Fine of $2000 and three years in prison.

52. (014) What is used to identify all official records kept in an office?
    a. File plan.
    b. Continuity binder.
    c. Records Management (RM) cross-reference listing.
    d. Air Force Records Information Management System (AFRIMS).

53. (014) Who do you contact to schedule Records Custodian (RC) training?
    a. Base Records Manager (RM).
    b. Current Records Custodian (RC).
    c. Chief of an Office of Record (COR).
    d. Functional Area Records Manager (FARM).

When you complete this course, please complete the student survey on the Internet at this URL: http:www.maxwell.af.mil/au/afiadl/operation/survey_fr.htm.

Student Notes

Glossary

Abbreviations and Acronyms

AAAHC	Accreditation Association for Ambulatory Health Care
ACR	American College of Radiology
AE	Aeromedical Evacuation
AFCFM	Air Force Career Field Manager
AFH	Air Force Handbook
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFMLL	Air Force Medical Logistics Letter
AFMLO	Air Force Medical Logistics Office
AFMLO/SGSLE	Air Force Medical Logistics Office/Clinical Engineering Branch
AFMOA	Air Force Medical Operations Agency
AFMS	Air Force Manpower Standard
	Air Force Medical Service
AFMSA/SGSF	Air Force Medical Support Agency/Health Facilities Division
AFMSA/SGSL	Air Force Medical Support Agency/Medical Logistics Division
AFOSH	Air Force Occupational Safety and Health
AFPC	Air Force Personnel Center
AFRC	Air Force Reserve Command
AFRIMS	Air Force Records Information Management System
AFSC	Air Force Specialty Code
ANG	Air National Guard
AS	Allowance Standard
BEE	Bioenvironmental Engineering
BMET	Biomedical Equipment Technician
CAGE	Commercial Activity/ Government Entity
CDC	Career Development Course
CENTAF/AOR	Central Command Air Forces/Area of Operations
CHCS	Composite Healthcare System
CONS	Contracting Squadron (Air Force)
COR	Contracting Officer Representative
CSA	Client Support Administrator

DIN-PACS	Digital Imaging Network – Picture Archiving and Communication System
DMLSS	Defense Medical Logistics Standard Support (computer system)
DOD	Department of Defense
DOEHRS	Defense Occupational & Environmental Health Readiness System
DRMO	Defense Reutilization and Marketing Office
DSCP	Defense Supply Center Philadelphia
DUNS	Data Universal Numbering System
ECN	Equipment Control Number
EPR	Enlisted Performance Report
F&FP	Force and Financial Plan
FAC	Functional Account Code
FARM	Functional Area Records Manager
FCC	Functional Cost Code
FDA	Food and Drug Administration
FTE	Full Time Equivalent
FY	Fiscal Year
FYDP	Fiscal Years Defense Program
GPC	Government Purchasing Card
HAF	Headquarters Air Force
HAF/A1M	Headquarters Air Force Directorate of Manpower and Organization
HAF/SG	Headquarters Air Force Surgeon General
HIPPA	Health Insurance Portability and Accountability Act
HSI	Health Services Inspection
HTM	Healthcare Technology Management
HVAC	Heating, Ventilation, and Air Conditioning
IMA	Individual Mobilization Augmentee
MAJCOM	Major Command
MAJCOM/SGSL	Major Command Medical Logistics
MDG	Medical Group Commander
MEDLOG	Medical Logistics (refers to computer system)
MEMO	Medical Equipment Management Office

MEPRS	Medical Expense and Performance Reporting System
MERC	Medical Equipment Repair Center
MFM	MAJCOM Functional Manager
MilPDS	Military Personnel Data System
MLFC	Medical Logistics Flight Commander
MOF	Manpower and Organization Flight
MPES	Manpower, Programming, and Execution System
MTF	Medical Treatment Facility
NCOIC	Noncommissioned Officer in Charge
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSN	National Stock Number
OEM	Original Equipment Manufacturer
OI	Operating Instruction
OSHA	Occupational safety and Health Administration
PACS	Picture Archiving and Communication System
PCRI	Post Calibration Radiation Inspection
PCS	Permanent Change of Station
PHI	Protected Health Information
PIMR	Preventive Health Assessment and Individual Medical Readiness
PM	Preventive Maintenance
PMI	Patient Movement Item
PPE	Personal Protective Equipment
QA	Quality Assurance
R&D	Research and Development
RC	Records Custodian
RDS	Records Disposition Schedule
RF	Radio Frequency
RFP	Request for Proposal
RM	Records Manager
RMO	Resource management Office
SAV	Staff Assistance Visit
SCR	System Change Request
SEI	Special Experience Identifier

SG	Surgeon General
SMDA	Safe Medical Devices Act
TA	Table of Allowance
TDY	Temporary Duty
TMA	Tricare Management Activity
UFC	Unified Facilities Criteria
UID	Unique Identification
UII	Unique Item Identifier
UMD	Unit Manning Document
UMDMS	Universal Medical Device Nomenclature System
UPMR	Unit Personnel Manpower Roster
USAF	United States Air Force
USR	Unit Safety Representative
VASS	Veteran Affairs Special Services
WRM	War Reserve Materiel

DMLSS Abbreviations and Acronyms

AM	Assemblage Management module
CAIM	Customer Area Inventory Management module
ECN	Equipment Control Number
EDR	Equipment Detail Record
EM	Equipment Management module
FM	Facilities Management module
HMR	Historical Maintenance Report
IM	Inventory Manager module (DMLSS term)
MA	Maintenance Activity/Equipment Maintenance module
MRL	Maximum Repair Limit
OGA	Other Government Agency
SS	System Services module
VTB	Vertical Tool Bar

Student Notes

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