CDC 4A271N

Biomedical Equipment Craftsman

Volume 2. Management Functions

Air Force Institute for Advanced Distributed Learning

Air University

Air Education and Training Command

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THIS SECOND volume of CDC 4A271N, *Biomedical Equipment Craftsman*, covers more of the specifics of the day-to-day management of a BMET shop. This course is not intended to be your sole source of information on managing a BMET shop. There are numerous instructions, regulations, and websites listed throughout. You should take the opportunity to find these references and become familiar with them.

Unit 1 covers organizing and managing the equipment maintenance program to include war reserve equipment. You will also learn about medical readiness reports and deployment taskings. Lastly, military and civilian inspections and how they affect your shop will be covered.

Unit 2 explains medical equipment management from cradle to grave. The money or resource management is covered. The volume and course ends with quality assurance issues such as recalls, modifications, and investigations.

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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 do the unit review exercises.

Page

Student Notes

Please read the unit menu for unit 1 and continue ➔

Unit 1. Maintenance Programs

1–1. Managing the Equipment Maintenance Program

Due to the small size of the 4A2X1 career field, it is not unusual for a Staff Sergeant (SSgt) or Technical Sergeant (TSgt) to be placed in charge of a maintenance shop. Many cross-trainees were placed in charge of a shop right out of the basic course, just by virtue of rank. The quicker you master management skills and knowledge required to run a shop, the easier your job will become. Earlier in this career development course (CDC), you learned where you fit into the career field structure and about some of the organizations that can provide you support and guidance. This lesson covers the duties and responsibilities of a Biomedical Equipment Technician (BMET) manager as you run the day-to-day operations of a biomedical equipment maintenance shop.

Your primary duty as a BMET is to maintain the medical equipment in your facility. It is pretty easy to say, but the knowledge and effort it takes to make it happen is not so easy. An equipment maintenance program has many aspects, due in part to the different categories of equipment within the program. Each equipment item has its own maintenance requirements, driving work load requirements and priorities that must be met. An ordinary equipment cycle will last for years, starting with the initial purchase and acceptance inspection through years of service until it outlives its usefulness and is sent to salvage. During that time, you will inspect, repair, calibrate, perform preventive maintenance, and conduct safety inspections on it more times than you'd like to count. You may have to respond to a hazard alert notice, modify it, or arrange contract maintenance. You'll certainly order parts and you'll keep track of every step of its life, either manually or by computer. Now, multiply this by the hundreds or thousands of pieces of equipment in your facility and you will begin to see the scope of a BMET's duties. The information in this lesson will help you organize and execute your maintenance responsibilities.

201. Organizing the maintenance program

As a BMET noncommissioned officer (NCO), a big part of your duty is *managing* equipment maintenance. At first glance this may not seem complicated; however, there is more to maintenance management than simply establishing priorities and completing work orders. If your maintenance program is not organized, you can easy become overwhelmed.

Creating maintenance teams

Defense Medical Logistics Standard Support (DMLSS) makes it very easy to organize and manage a maintenance program. The first step in computerizing your requirements would be to establish team names and assign personnel to them in the Maintenance Activity (MA) module "*Personnel*" screen.

Once you have your teams created and personnel assigned to each team, the next step is to assign equipment to the individual maintenance teams. DMLSS design allows you the flexibility to assign a different maintenance team for scheduled work orders and unscheduled work orders.

You can assign maintenance team for individual pieces of equipment in the *Maintenance Data* tab of the *Equipment Record*. To assign maintenance teams for a batch of equipment, perform an *Equipment Search* and narrow the search as you see fit. Once the search results come up, select multiple rows, then select the "*MA/Team*" button on the right hand tool bar. A box will then appear that will let you select the *Scheduled Team* and *Unscheduled Team*. This is a lot easier and more efficient than changing the maintenance team on each piece of equipment one at a time.

Shop organization

There are several ways to organize a maintenance program and it varies depending on the facilities mission, manning, work load, and the skills of BMET's assigned. We'll discuss three methods on how to organize a shop to give you a better understanding of how to organize a program. There is not one "perfect" way of doing it. As your mission, equipment inventory, and personnel change, you will need to reassess your organization.

Category of work

One popular way to organize a shop is by the category of work: scheduled and unscheduled. Each team would be responsible for all work orders in the particular category throughout the medical treatment facility (MTF).

- Scheduled team.
- Unscheduled team.

Duty section

Another shop organization is to arrange the workload by sections. For instance, teams are established for areas of the MTF by function and/or physical location. Each team would be responsible for all scheduled and unscheduled work orders for those particular duty sections.

- Team 1 - Clinics, X-Ray, Lab.
- Team 2 - Surgery, ICU, Wards.
- Team 3 - Dental, Bioenvironmental Engineering (BEE), Outside Activities.

Equipment type

In a large MTF, another possible shop organization technique is to group equipment types together. Each team would be responsible for all scheduled and unscheduled work orders for the particular equipment.

- Radiology.
- Laboratory.
- Dental.
- Infusion pump, defibrillator.
- Patient monitor.

Work smarter ~ not harder

It is more efficient to complete multiple work orders on like equipment at the same time. For example, it is better to calibrate multiple defibs at the same time instead of only one or two every month. It can take a lot of time to locate the equipment, get the literature, test equipment, and test set-ups together for a calibration each time. This wastes a lot of time. In order to maintain skills, it is best to group like items together several times per year and not everything all at once. This maintains a balance between maintaining skills and working smart.

Once you have decided on the best way to arrange the teams for your mission, you'll need to get a snapshot of how the workload is distributed over the year for those teams. This is easily done in the MA module of DMLSS.

DMLSS scheduled maintenance plans

DMLSS makes it extremely easy to view and align maintenance schedules. This can be done with an overall picture of the entire workload and narrowed down to individual equipment.

Summary Scheduled Workload

To get a snapshot of your shop's overall workload go to: *Navigate > Schedules > Summary Workload Forecasting*. From there, you can select a variety of search criteria. To get a view of the "big picture", just hit "search." Once the report appears, select the *Number of Work Orders* tab to see how the work orders are distributed for each account over the entire year. Figure 1–1 shows the how the number of work orders are distributed for each account over the entire year.

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
SUMMARY SCHEDULED WORKLOAD REPORT
NUMBER OF WORK ORDERS

Date Prepared: 01 Jun 2007 **As of Date:** 01 Jun 2007

Criteria:

Customer	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Total
LINCOLN AIR NATIONAL GUARD	3	0	4	0	11	0	0	0	1	0	8	1	28
MEDICAL EQUIPMENT REPAIR CENTER	3	1	13	5	6	2	2	2	7	8	4	4	57
MEDICAL READINESS	0	0	0	0	0	0	0	0	0	1	0	0	1
MEMO HOLD	1	1	1	0	0	0	0	1	1	0	0	0	5
MENTAL HEALTH CLINIC	0	0	0	0	0	0	0	5	0	0	0	0	5
OPHTHALMOLOGY CLINIC	1	0	14	1	0	1	1	0	15	1	1	1	36
OPTOMETRY CLINIC	1	0	5	0	0	0	0	0	12	0	0	0	18
ORTHO CLINIC	0	1	0	0	3	0	0	0	0	0	3	0	7
OUTPATIENT PHARMACH	3	0	0	2	0	0	3	0	0	1	0	0	9
PEDIATRIC CLINIC	1	0	0	23	0	0	0	0	0	21	0	0	45
PHYSICAL THERAPY	0	14	0	0	0	0	0	18	0	1	0	0	33
PUBLIC HEALTH	0	0	4	0	0	0	0	0	0	6	0	0	10
PULMONARY FUNCTION	0	2	0	0	1	0	0	2	0	0	0	0	5
RADIOLOGY	1	4	0	27	0	0	0	3	2	4	16	2	59
RAPIDS CONSUMABLE	1	1	0	0	0	0	0	1	0	0	0	0	3
SURGERY	0	0	0	0	62	0	0	4	0	0	70	1	137
SURGERY CLINIC	0	0	0	0	6	0	0	0	0	0	3	0	9
URGENT CARE CLINIC	0	4	33	1	0	2	0	4	24	0	0	2	70
UROLOGY CLINIC	1	6	0	1	12	0	0	10	0	1	8	0	39
USSTRATCOM	0	0	0	14	0	0	0	0	0	0	0	0	14
VET CLINIC	6	0	0	0	0	0	6	0	0	0	0	0	12
WOMENS HEALTH CLINIC	1	0	0	22	0	0	0	0	2	9	0	0	34
Total:	107	88	149	192	145	9	157	128	161	217	166	24	1,543

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Figure 1–1. Summary Scheduled Workload numbers.

The *Graph* tab will show you how many scheduled work orders you have each month after you select the *Number of Work Orders* radio button, then *Show Graph*. Figure 1–2 shows a graph of the workload over the entire year. Notice that December and June have a very light workload. It is good to use this feature to lighten up the workload on the months that are popular for taking leave. Another month to lighten up would be the month that your Medical Equipment Repair Center (MERC) team visits. That way you and your technicians can dedicate time to spend with the MERC team. The training that you can receive from the MERC team can be invaluable.

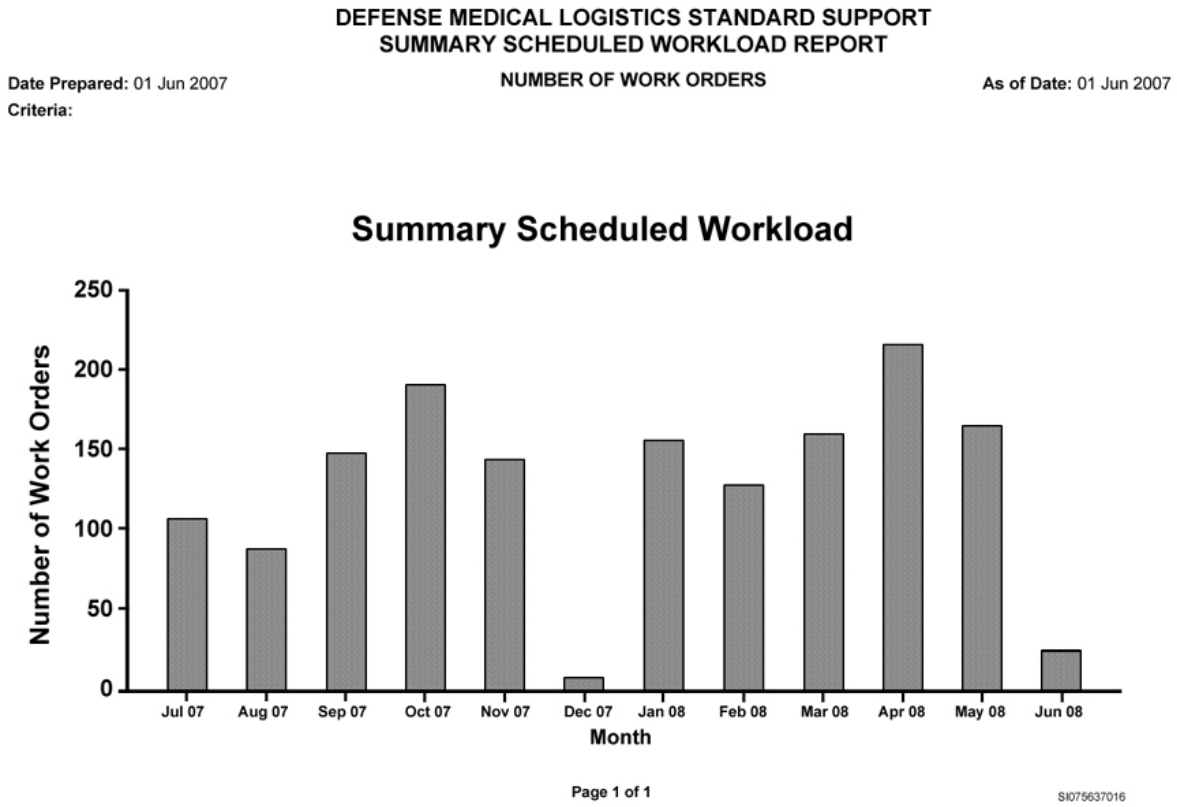

Figure 1–2. Summary Schedule Workload graph.

Detailed Scheduled Workload

To view your shop's workload showing each piece of equipment, go to: *Navigate > Schedules > Detailed Workload Forecasting*. From there, you can select a variety of search criteria. Select the ones that best suit what you are looking for. The most useful would be by customer and device class and/or nomenclature. This is the most efficient way to view and align your shop's scheduled workload. Let's take a look at one particular example. Your facility has a large number of thermometers. Your technicians spend a lot of time searching for these thermometers every month. Figure 1–3 is an example of a report for thermometers. As you can see, the workload is scattered all over the report. You have decided as a labor savings, it would be more efficient to do them all in the same month. The calibration dates can easily be aligned by grabbing the letter (C), dragging and dropping it on another month. One caution, DMLSS will allow you to drop it farther in the future than the recommended maintenance schedule, but this is not recommended because you would exceed the standards established by Air Force Instruction (AFI) 41-201. Instead, it is better to move it to a sooner month.

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
DETAILED SCHEDULED WORKLOAD REPORT

Date Prepared: 01 Jun 2007 **As of Date:** 01 Jun 2007

Grouped By: NOMENCLATURE

Criteria: Organization = 55TH MED GROUP, Device Class = THERMOMETERS, Nomenclature = THERMOMETER, ELECTRONIC, INFRARED, EAR

THERMOMETER, ELECTRONIC, INFRARED, EAR

Nomenclature	ECN	SF	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Total
THERMOMETER, ELECTRONIC, INFRARED, EA	007668										I C				0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008215					I C									0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008476									I C					0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008577											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008581											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008611									I C					0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008957												I C		0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	008958						I C								0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009060					I C									0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009061					I C									0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009064										I C				0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009742											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009743											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009744							I C							0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	009746					I C									0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	010054											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	010303						I C								0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	010370											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	010372											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	012390								I C						0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	012391								I C						0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	012392								I C						0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	013004			I C											0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	013350											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	013351											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	013604										I C				0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014000												I C		0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014001												I C		0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014015											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014016											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014017											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014018											I C			0.0
THERMOMETER, ELECTRONIC, INFRARED, EA	014019											I C			0.0

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Figure 1–3. Detailed Scheduled Workload.

This report uses four letters (I, P, C, and S) that correspond to:

- I – Inspection.
- P – Preventive maintenance.
- C – Calibration.
- S – Scheduled parts replacement.

I and C only appear on this report because this particular equipment only requires Inspection and Calibration according to the maintenance plan.

The *Detailed Scheduled Workload Report* should be reviewed several times a year to catch items that have gotten knocked out of cycle for whatever reason. To keep your shop at peak efficiency, those items need to be identified and corrected.

Unscheduled maintenance

It is easy to organize and plan your scheduled workload to best suit your mission, however when it comes to unscheduled maintenance it is not so easy. It goes without saying that it is impossible to plan emergencies. One thing that you can do to help with unscheduled work orders is to have a priority system and active status review plan. This is especially important when it comes to equipment that is awaiting parts (AP). It's very easy, while managing a shop, for AP work orders to easily fall between the cracks if you aren't keeping an eye on them.

202. Performance standards

Once you have the maintenance teams established and workload arranged to best suit your mission, it is time to set priorities and establish performance standards. This will ensure everyone is on the same page and there are no questions as to what the shops monthly goals are.

Work order priority system

The work order priority system was covered in the 5-level CDC. As a 7-level, it is up to you to ensure your technicians and MTF personnel understand this system and are using it appropriately.

Setting performance standards

Performance standards are vitally important to your shop. Just like an initial performance feedback, you need to set your expectations and goals for the shop. The standards need to be specific, objective, measurable, and achievable. When establishing the standards, be sure to keep the Air Force Core Values and BMET Creed in mind. Specific goals and a positive attitude will help you motivate your technicians and set the "tone" of your shop.

Scheduled maintenance

Performance standards are used as an evaluation tool to gauge how your shop is doing in completing its mission, and are goals for your shop to meet or exceed in a given time period. A good industry performance standard for monthly scheduled work order completion is:

- 100 percent – life-support equipment (anesthesia/ventilator requirements are driven by the current Joint Commissions standards.)
- 90 percent – non life-support equipment.

To help you monitor the progress throughout the month, you can set *weekly* milestones. That way you won't be surprised at the end of the month. Such milestones might be:

- Week 1 – 40 percent.
- Week 2 – 65 percent.
- Week 3 – 80 percent.
- Week 4 – 90 percent/100 percent.

The Week 1 completion percentage is higher because the easiest work orders are usually done at the first of the month. As the month goes on, equipment is harder to find and not as many work orders get closed.

To keep your technicians motivated, you can establish a "goal day" (mission permitting) if the monthly goals are met by a certain day. A free day off is a great incentive and will go a long way for most people. An afternoon shop picnic/bowling/gathering also makes a good incentive and builds camaraderie.

If the goals are not met, and this is a one-time occurrence it could be viewed as an anomaly and attributed to various factors, but if it begins to happen on a regular basis, it indicates a negative trend and requires further investigation. There are any number of scenarios that could cause this negative trend to happen. Upon investigation it could be found that there are internal factors (factors within your shop) causing the poor work order completion rate such as personnel goofing off or taking too much time to complete a work order or even too few BMETs assigned to the scheduled workload. There could also be external factors (factors outside of your shop) causing the negative trend, such as a lack of cooperation from MTF sections or a delay in receiving required parts or materials. No matter what the cause, the performance standard enabled the negative trend to be identified and ultimately, the problem to be corrected.

Customer surveys

Another performance standard that may be measured is customer satisfaction. Per AFI 41–201, you should send out a customer survey at least annually. Your shop may have an established performance standard of having 90 percent of the customers respond that the service provided is "excellent." If that standard begins to drop, this indicates a negative trend to shop supervision and may indicate that further investigation is warranted. Just as with the previous example, there are numerous factors that could cause this trend, but the fact that the negative trend was identified, at least indicates to shop supervision that something is happening, which requires their attention.

These are only a few examples of performance standards that may be measured in your shop. To help convey how your shop is meeting the goals to your technicians and leadership, you can create metrics. Performance standards and metrics work hand-in-hand. Metrics have the same purpose as performance standards, which is to help your shop meet mission requirements and improve customer support

Metrics

Metrics are measurements, taken over a period of time and are accurate, useable, and communicate information about processes within your shop. You should *not* spend time to measure information that does not add value to your organization. Figure 1–4 is an example of a work order metric.

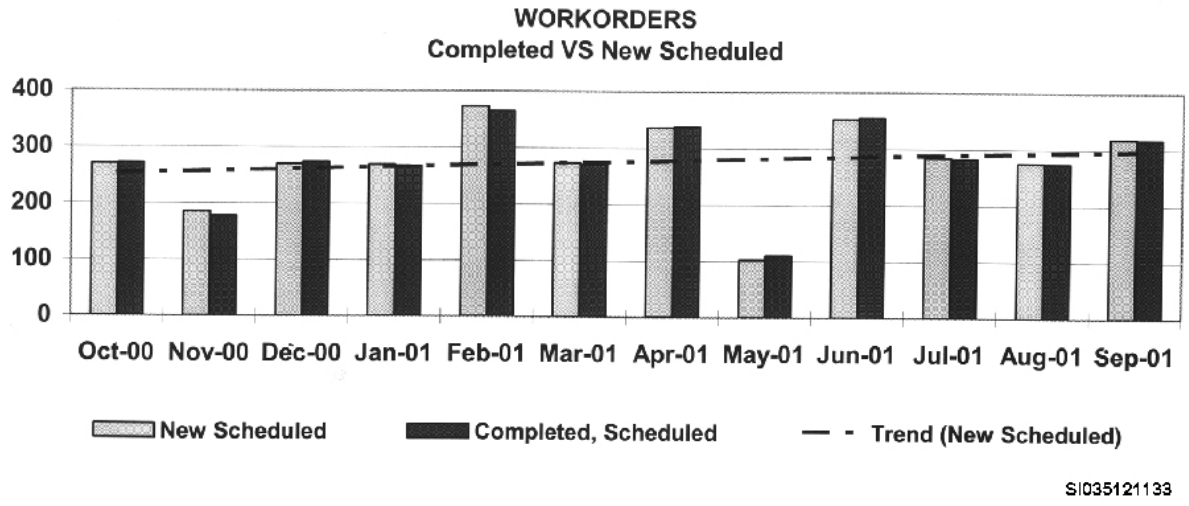

Figure 1–4. Sample work order metric.

Metrics offer meaningful measurements that help you make data driven decisions within your shop. For example, let's say that a metric, which shows scheduled work order completion rates, begins to show a trend of more and more scheduled work orders remaining open at the end of the month. In this case, you could use this data as justification to put more BMETs on scheduled work orders and less on unscheduled work orders. Of course, this is simplified, but the main thing to remember is that metrics should offer some meaningful information to help your shop perform better and show how well you are serving your customer (the rest of the MTF).

Guidelines of a good metric include the following characteristics:

1. Meaningful to your shop, customers, and leadership.
2. Simple and easy to understand.
3. Clearly defined.
4. Timely.
5. Shows a trend.
6. Outcomes drive appropriate action.

Microsoft Excel is the most popular program to create metrics. Excel allows data to be input/updated to create graphs for easy viewing. The exact data that you capture and graph will depend on your mission and needs/wants of your leadership.

Some popular metrics that have been created are:

- Scheduled completion (number/percentage).
- Overall completion (number/percentage).
- Statused work order (number/percentage).
- Numbers of total work orders (scheduled/unscheduled).
- Number of "workable" work orders (Assigned, Assigned Delay, Parts Issued, Unassigned, Unassigned Delay, or Work in Progress).
- Number of Awaiting Parts, Return to Contractors, and Canceled Work Orders.
- Unable to Locate.
- No Defect/Operator Error.
- Open over 30/60/90.

The data used to create metrics comes from DMLSS "canned" reports or a custom Business Objects report. This data is plugged into the Excel spreadsheet to update the graphs.

DMLSS management reports and inquiries

DMLSS reports and inquiries are the main source of data for the management reports. Some reports are available as a *Standard Report* and *Standard Inquiry*. The main difference is a report is produced periodically (monthly/quarterly/annually) and an inquiry is produced "as requested."

Reports

A report is a collection of data presented automatically on a periodic or event-driven basis. Reports represent the status at that point in time and/or present data of a historical nature. The data is presented in a standardized format, and cannot be manipulated. Standard reports essential for the effective management of the activity will be prepared automatically. Standard reports will be produced for local MTF management, and to meet the requirements of higher headquarters reporting.

Maintenance Management Report

The Maintenance Management Report provides summarized management data on the type of work performed and time expended, and is provided for supervisors and higher headquarters, if applicable, to evaluate the equipment maintenance program. It is a standard report produced monthly during the end-of-month processing and has three-parts: Unscheduled Services, Scheduled Services, and Maintenance Service Time Accounting. The report is archived in DMLSS for 12 months. Figure 1–5 is and example of the report.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
MAINTENANCE MANAGEMENT REPORT
MEDICAL EQUIPMENT REPAIR CENTER
Part I: Unscheduled Services

	Work By Technician	Work By Other
Number of Services Performed	490	6
Hours Expended	384.7	12.0
Average Response Time (HRS)	.0	.0

Work Orders

Beginning Balance	84
New	271
Re-Opened	0
Completed	257
Canceled	8
Ending Balance	90

Ending Balance Status

	Unassigned	Assigned	Parts	Depot	Contract	Total
00-30 Days	9	27	3	0	10	**49**
31-60 Days	2	14	1	0	9	**26**
61-90 Days	0	5	1	0	1	**7**
91+ Days	1	5	1	0	1	**8**
Total	**12**	**51**	**6**	**0**	**21**	**90**

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Figure 1–5a. Maintenance Management Report, page 1 of 3.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
MAINTENANCE MANAGEMENT REPORT
MEDICAL EQUIPMENT REPAIR CENTER
Part II: Scheduled Services

	Work By Technician				Work By Other			
	INSP	PM	CAL	SPR	INSP	PM	CAL	SPR
Number of Services Scheduled	665	474	389	37	N/A	N/A	N/A	N/A
Number of Services Performed	417	296	223	33	1	0	2	0
Hours Expended	108.3	86.9	141.8	7.7	1.0	.0	2.0	.0
Number of Services Not Performed	248	178	166	4	N/A	N/A	N/A	N/A
Percent of Services Performed	62.7%	62.4%	57.3%	89.2%	N/A	N/A	N/A	N/A

Work Orders

Beginning Balance	254
New	437
Re-Opened	5
Completed	427
Canceled	26
Ending Balance	243

Ending Balance Status

	Unable to Locate	Unassigned	Assigned	Parts	Depot	Contract	Total
00-30 Days	22	7	37	2	2	13	**83**
31-60 Days	7	1	19	0	1	10	**38**
61-90 Days	24	0	8	Page 2 of 3	0	24	**64**
91+ Days	25	9	4	3	0	17	**58**
Total	**78**	**17**	**68**	**13**	**3**	**64**	**243**

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Page 2 of 3

Figure 1–5b. Maintenance Management Report, page 2 of 3.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
MAINTENANCE MANAGEMENT REPORT
MEDICAL EQUIPMENT REPAIR CENTER
Part III: Maintenance Service Time Accounting

	Military	Civilian
Authorized	0	0
Assigned	0	0

Time Sheet Information

Personnel Assigned	31
Regular Hours	3,701.0
Overtime Hours	52.0
Total Hours	3,753.0
Non-Duty Absence	372.0
Duty Absence	294.0
Admin/Support	.0
Technical Training	.0
Supervisory Hours	.0
Travel Hours	758.0

Time Sheet Calculations

Charged Hours	729.4
Hours Available for Work	3087.0
Charged Hours/Hours Available for Work	23.6%
Hours Available for Maintenance	2329.0
Charged Hours/Hours Available for Maintenance	31.3%

Authenticating Officer

Name _____ Signature _____
Grade _____ Date Signed _____
Title _____

Maintenance Manager

Name _____
Grade _____
Signature _____

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Page 3 of 3

Figure 1–5c. Maintenance Management Report, page 3 of 3.

Productivity Report – Maintenance Activity, Team, and Technician

The Productivity Report is available in three formats: Maintenance Activity, Team, and Technician. It can be created at each of those levels and contains a comparison of the time available to accomplish the work and how that time was used to support the maintenance mission. The report is delineated by type of work and hours charged for each maintenance team. The report also shows the concentration of the total time spent in performing that type of work, by both the current month and a trend of the last 12 months. It is used by the maintenance manager to monitor and evaluate the work accomplished during the month by the Maintenance Activity, Team, or Technician. The report is generated as a standard report during each end of month process and is archived in DMLSS for 12 months. Figure 1–6 is an example of the report.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
MAINTENANCE ACTIVITY PRODUCTIVITY REPORT
MEDICAL EQUIPMENT REPAIR CENTER

Regular Hours:	3,701.0	Hours Available for Work:	3,087.0	Hours Available for Maintenance:	2,329.0
Overtime Hours:	52.0	Admin. Support Hours:	0.0	Total Hours Charged:	729.4
Total Hours:	3,753.0	Technical Training Hours:	0.0	Work Orders Completed:	681
Duty Absence:	294.0	Supervisory Hours:	0.0	Charged Hours/Hours Avail. For Work:	23.6%
Non-Duty Absence:	372.0	Travel Hours:	758.0	Charged Hours/Hours Avail. For Maint:	31.3%

UNSCHEDULED

Service Type	Hours / Month	% Month	Hours / 12 Months	% 12 Months
INSP	13.0	3.4	161.0	3.4
PM	6.9	1.8	122.6	2.6
CAL	6.9	1.8	206.7	4.4
SPR			3.8	0.1
REPAIR	133.1	34.6	1,706.0	36.1
QI FAILED SCHEDULED EVENT			2.7	0.1
ACCEPTANCE INSPECTION	80.6	21.0	1,340.5	28.3
TECHNICAL EVALUATION	3.0	0.8	19.2	0.4
PROJECT			26.4	0.6
MODIFICATION	0.5	0.1	4.8	0.1
QUALITY ASSURANCE	140.2	36.4	1,087.3	23.0
INSTALLATION	0.5	0.1	31.5	0.7
OPERATOR TRAINING			17.8	0.4
TRAVEL			1.5	0.0
Total	**384.7**	**100.0**	**4,731.8**	**100.0**

SCHEDULED

Service Type	Hours / Month	% Month	Hours / 12 Months	% 12 Months
INSP	108.3	31.4	1,861.3	35.4
PM	86.9	25.2	1,295.8	24.6
CAL	141.8	41.1	1,935.2	36.8
SPR	7.7	2.2	170.3	3.2
Total	**344.7**	**100.0**	**5,262.6**	**100.0**

TEAM SECTION

Team	Scheduled Hours	Unscheduled Hours	Total Hours	% of MA Total
CONTRACTS	19.6	14.5	34.1	4.0

Page 1 of 2 SI075637013

Figure 1–6a. Productivity Report – Maintenance Activity, page 1 of 2.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
MAINTENANCE ACTIVITY PRODUCTIVITY REPORT
MEDICAL EQUIPMENT REPAIR CENTER

TEAM SECTION

Team	Scheduled Hours	Unscheduled Hours	Total Hours	% of MA Total
EXTERNAL SERVICES	90.1	97.5	187.6	21.7
GE CONTRACT	0.0	6.0	6.0	0.7
MANAGEMENT	0.4	0.2	0.6	0.1
SCHEDULED MAINTENANCE	206.0	169.7	375.7	43.5
UNSCHEDULED MAINTENANCE	28.6	96.8	125.4	14.5
MA Total	**344.7**	**384.7**	**729.4**	**84.5**

SI075637014

Figure 1–6b. Productivity Report – Maintenance Activity, page 2 of 2.

Work Order Management Summary – Maintenance Activity, Team, and Technician

This is a standard report that is produced monthly in three formats: Maintenance Activity, Team, and Technician. The Work Order Management Summary will provide summary data of all work orders that have been created, and will display the totals completed and the status of any work orders remaining open. The report will provide a view of the work order production and performance of the Maintenance Activity, Teams, and Technicians to the maintenance manager. They each show a 12-month trend and are archived in DMLSS for 24 months. Figure 1–7 is an example of the report.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
WORK ORDER MANAGEMENT SUMMARY
MEDICAL EQUIPMENT REPAIR CENTER
12 Month Trend (May 2006 - April 2007)

	May 06	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	Avg.	Total
BEGINNING BALANCE	1,976	2,156	1,321	856	514	411	378	408	466	373	562	336	813	
UNSCHEDULED	197	269	167	161	164	157	176	168	181	140	130	82	166	
SCHEDULED	1,779	1,887	1,154	695	350	254	202	240	285	233	432	254	647	
EST. SCHEDULED HRS.	10.0	9.0	2.5	.0	.0	1.5	1.5	1.5	1.5	2.5	.0	.0	2.5	
NEW WORK ORDERS	595	754	610	689	521	632	626	555	524	1,102	744	708	672	8,060
UNSCHEDULED	267	475	359	398	203	243	161	221	223	208	324	271	279	3,353
SCHEDULED	328	279	251	291	318	389	465	334	301	894	420	437	392	4,707
EST. SCHEDULED HRS.	2.0	1.0	.0	.0	1.5	2.0	1.0	.0	2.5	1.5	1.5	20.5	2.8	33.5
RE-OPENED WORK ORDERS	2	1	25	2	3	3	1	0	2	3	4	5	4	
UNSCHEDULED	2	0	0	0	2	1	1	0	2	3	3	0	1	
SCHEDULED	0	1	25	2	1	2	0	0	0	0	1	5	3	
EST. SCHEDULED HRS.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	
TOTAL WORKLOAD	2,573	2,911	1,956	1,547	1,038	1,046	1,005	963	992	1,478	1,310	1,049	1,489	
UNSCHEDULED	466	744	526	559	369	401	338	389	406	351	457	353	447	
SCHEDULED	2,107	2,167	1,430	988	669	645	667	574	586	1,127	853	696	1,042	
EST. SCHEDULED HRS.	12.0	10.0	2.5	.0	1.5	3.5	2.5	1.5	4.0	4.0	1.5	20.5	5.3	
COMPLETED	324	1,415	1,047	1,008	597	651	564	471	604	891	890	684	762	9,146
UNSCHEDULED	109	540	354	376	196	211	167	186	252	209	297	257	263	3,154
UNSCHEDULED HOURS	459.2	701.6	672.6	589.8	452.1	349.8	298.9	194.2	465.4	627.2	697.1	406.8	492.9	5,914.7
SCHEDULED	215	875	693	632	401	440	397	285	352	682	593	427	499	5,992
EST. SCHEDULED HOURS	3.0	7.5	2.5	.0	.0	2.0	1.0	.0	1.5	4.0	1.5	20.5	3.6	43.5
ACTUAL SCHEDULED HOURS	211.8	2,042.9	729.3	587.2	560.9	369.3	653.0	304.7	327.7	557.1	905.8	355.8	633.8	7,605.5
CANCELED	91	177	52	26	30	16	35	25	17	26	89	34	52	618
OUTSTANDING	2,156	1,321	856	514	411	378	408	466	373	562	336	332	676	
UNSCHEDULED	269	167	161	164	157	176	168	181	140	130	82	89	157	
UNASSIGNED	4	2	17	5	2	6	5	2	9	5	4	2	5	
UNASSIGNED-DELAYED	148	20	4	17	3	2	6	17	11	13	4	7	21	
ASSIGNED	6	3	1	9	1	2	3	0	8	18	11	4	6	
ASSIGNED-DELAY	18	15	13	24	4	8	7	24	11	13	9	19	14	
AWAITING DELIVERY	0	0	0	0	9	1	0	1	0	0	0	1	1	
AWAITING PARTS	42	39	33	24	27	37	29	35	29	14	11	6	27	
PARTS ISSUED	1	4	4	6	0	0	1	0	2	0	1	0	2	
WORK IN PROGRESS	25	24	26	31	16	11	14	11	16	12	13	23	19	
WORK ON HOLD	7	36	34	34	74	68	78	65	35	36	4	5	40	
RETURN TO DEPOT	0	2	3	3	2	0	0	0	2	1	0	0	1	
RETURN TO CONTRACTOR FOR SERVICE	14	4	4	5	6	7	10	14	9	11	14	14	9	
PENDING CONTRACTOR SERVICE ON SITE	3	18	22	6	13	32	15	12	8	6	10	7	13	
WAIVER REQUESTED	1	0	0	0	0	0	0	0	0	0	0	0	0	
UNABLE TO LOCATE	0	0	0	0	0	2	0	0	0	1	1	1	0	
SCHEDULED	1,887	1,154	695	350	254	202	240	285	233	432	254	243	519	
EST. SCHEDULED HRS.	9.0	2.5	.0	.0	1.5	1.5	1.5	1.5	2.5	.0	.0	.0	1.7	
UNASSIGNED	1,571	615	279	20	20	5	0	11	6	60	2	17	217	
ASSIGNED	304	531	412	329	172	124	158	176	125	285	206	148	248	
UNABLE TO LOCATE	12	8	4	1	62	73	82	98	102	87	46	78	54	

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Figure 1–7. Work Order Management Summary – Maintenance Activity.

Workload Report

The Workload Report shows the number and status of open unscheduled work orders, the number of open scheduled work orders, and the estimated hours required to complete the scheduled work orders. In addition, this report shows the number of open unscheduled and scheduled work orders that fall within the following three ranges: 31–60 days, 61–90 days, and >90 days. This report is used by the maintenance manager to administer the maintenance workload during the month and is generated as a standard report after the scheduled maintenance work orders have been created for the month at the beginning of each month. The report will display open work orders in rows by Work Order Category and Work Order Status. Scheduled work orders will be displayed by Unassigned, Assigned, and Unable to Locate. In addition, the program will show the periods of time the work orders have been open. It is archived in DMLSS for one month. Figure 1–8 is an example of the report.

Date Prepared: 31MAY2007 As Of: 30APR2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT

WORKLOAD REPORT

MEDICAL EQUIPMENT REPAIR CENTER

May 2007

OPEN WORK ORDERS			
UNSCHEDULED		**SCHEDULED**	
Unassigned:	2	Unassigned:	535
Unassigned - Delay:	7	Unassigned - Delay:	0
Assigned:	4	Assigned:	35
Assigned - Delay:	19	Assigned - Delay:	0
Awaiting Delivery:	1	Awaiting Delivery:	4
Awaiting Parts:	6	Awaiting Parts:	13
Part(s) Issued:	0	Part(s) Issued:	1
Work in Progress:	23	Work in Progress:	22
Work On Hold:	5	Work On Hold:	6
Returned to Depot:	0	Returned to Depot:	3
Returned to Contractor for Service:	14	Returned to Contractor for Service:	8
Pending Contractor Service On Site:	7	Pending Contractor Service On Site:	56
Waiver Requested:	0	Waiver Requested:	0
Unable to Locate:	1	Unable to Locate:	78
TOTAL	**89**	**TOTAL**	**761**
Open 31-60 Days:	25	Open 31-60 Days:	38
Open 61-90 Days:	6	Open 61-90 Days:	63
Open >90 Days:	7	Open >90 Days:	58
		Est. Scheduled Hours:	17.3

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Figure 1–8. Workload Report.

Workload Report (Inquiry)

The Workload Report Inquiry is identical to the Workload Report except that it can be requested anytime during the month to view the real-time data. This is used to ensure your shop is meeting its goals and milestones throughout the month.

Inquiry

An inquiry is similar to a report in that the inquiry will present data in a standard pre-programmed format. Inquiries are not produced automatically on a periodic schedule. Instead, inquiries are produced only when you request the information. Keep in mind, when the inquiry is printed, it is labeled as a report, so don't get these confused. The difference is how they are requested.

Contract Expiration Report (Report/Inquiry)

The report provides a list of contracts with contract end dates that will occur within a specified time frame and is used to alert the maintenance manager of equipment with a contract that is expiring in order to prepare for organizational or additional contractual maintenance support and to identify possible deficiencies that can be corrected before the contract period expires. The Contract Expiration Report is produced quarterly and the Contract Expiration Inquiry is produced when requested by the user. The report is archived in DMLSS for three months. Figure 1–9 is an example of the report.

Date Prepared: 16JUL2007 As Of: 16JUL2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
CONTRACT EXPIRATION INQUIRY
MEDICAL EQUIPMENT REPAIR CENTER
Report Begin Date: (01 JUL 2007)
Report End Date: (01 JUL 2008)

Part I: Contractor Sequence

Contractor	Contract Number	Description	End Date	Cost	Renew. Opt.	Contract POC	POC Phone	COR/COTR	# of Items
GENERAL ELECTRIC MEDICA	SPO20002D83361	IMAGING CONTRACT	30 Sep 2007		Y			GUNN, AARON	190
GENERAL ELECTRIC MEDICA	SP020004D8304000	PACS	30 Sep 2007		N			GUNN, AARON	34
THERMO ASSET MANAGEME	FA301006C0021	THERMO FY07	30 Sep 2007		N			GUNN, AARON	144

Part II: End Date Sequence

End Date	Contractor	Contract Number	Description	Cost	Renew. Opt.	Contract POC	POC Phone	COR/COTR	# of Items
30 Sep 2007	GENERAL ELECTRIC MEDICA	SPO20002D83361	IMAGING CONTRACT		Y			GUNN, AARON	190
30 Sep 2007	THERMO ASSET MANAGEME	FA301006C0021	THERMO FY07		N			GUNN, AARON	144
30 Sep 2007	GENERAL ELECTRIC MEDICA	SP020004D8304000	PACS		N			GUNN, AARON	34

Figure 1–9. Contract Expiration Report.

Remember Data Quality from Volume 1? The next three inquiries: Equipment without A Maintenance Activity Report, Equipment without a Maintenance Plan Report, and Maintenance Interval without a Date Due Report are part of that initiative. You should generate these inquiries on a regular basis to ensure they are blank. The items listed on these reports will not produce scheduled work orders. But if items do appear, you need to take the appropriate action to correct them.

Equipment without a Maintenance Activity Report (Inquiry)

The Equipment without A Maintenance Activity Report shows active equipment records that have a maintenance requirement, but have no associated maintenance activity.4 It is used by the maintenance manager to monitor and correct equipment records that have a maintenance requirement and no associated maintenance activity. If items appear on this inquiry, they need to be assigned to a Maintenance Activity in the *Maintenance Data* tab of the *Equipment Detail*. It is user generated as a standard inquiry report. Figure 1–10 is an example of the report.

DATE PREPARED: 29 MAY 2007 AS OF DATE: 29 MAY 2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
EQUIPMENT WITHOUT A MAINTENANCE ACTIVITY REPORT
MEDICAL EQUIPMENT REPAIR CENTER

This list shows active equipment records that have a maintenance requirement, but have no associated Maintenance Activity. A Maintenance Activity and a Maintenance Plan must be associated with the equipment record for the system to generate scheduled maintenance work orders for the equipment.

ECN	NOMENCLATURE	MANUFACTURER	COMMON MODEL	ITEM ID	SUS.
012932	ELECTROSURGICAL UNIT, MONOPOLAR/BIPOLAR	VALLEYLAB INC	FORCE 2	6515L379019EE	N
012933	ELECTROSURGICAL UNIT, MONOPOLAR/BIPOLAR	VALLEYLAB INC	FORCE 2	6515L379019EE	N
012934	ELECTROSURGICAL UNIT, MONOPOLAR/BIPOLAR	VALLEYLAB INC	FORCE 2	6515L379019EE	N
012935	ELECTROSURGICAL UNIT, MONOPOLAR/BIPOLAR	VALLEYLAB INC	FORCE 2	6515L379019EE	N
013492	SANDBLASTER	TRINITY TOOL CO	247BP	9470983	N
013493	SANDBLASTER	TRINITY TOOL CO	247BP	9470983	N
013494	SANDBLASTER	TRINITY TOOL CO	247BP	9470983	N
013495	SANDBLASTER	TRINITY TOOL CO	247BP	9470983	N
013496	SANDBLASTER	TRINITY TOOL CO	247BP	9470983	N

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Figure 1–10. Equipment without a Maintenance Activity Report.

Equipment without a Maintenance Plan Report (Inquiry)

The Equipment without a Maintenance Plan Report shows active equipment records that have a maintenance requirement, but have no maintenance plan associated with either the equipment nomenclature, manufacturer/common model or sequential equipment control number (ECN).4 It is used by the maintenance manager to monitor and correct equipment records that have a maintenance requirement and no associated Maintenance Plan and is user generated as a standard inquiry report. If items appear on this inquiry, they need to have a maintenance plan and be assigned and/or created in the *Maintenance Plan* screen. Figure 1–11 is an example of the report.

DATE PREPARED: 01 JUN 2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
EQUIPMENT WITHOUT A MAINTENANCE PLAN REPORT
MEDICAL EQUIPMENT REPAIR CENTER

AS OF DATE: 01 JUN 2007

This list shows active equipment records that have a maintenance requirement, but have no Maintenance Plan associated with either the Equipment Nomenclature, Manufacturer/Common Model or Equipment Control Number (ECN).

ECN	NOMENCLATURE	MANUFACTURER	COMMON MODEL	ITEM ID	SUS.
007671	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES		6520012574694	N
007299	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574594	N
012247	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520011256618	N
008279	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574594	N
008922	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574694	N
007298	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574594	N
007665	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574594	N
007670	ANALYZER, PHYSIOLOGIC, DENTAL PULP	CK DENTAL SPECIALTIES	2006	6520012574694	N
013916	APEX LOCATOR, ENDODONTIC	J MORITA USA INC		6520LM30789317	N
014205	APEX LOCATOR, ENDODONTIC	J MORITA USA INC		6520L511330900	N
014989	APEX LOCATOR, ENDODONTIC	J. MORITA MFG. CORP.	ROOT ZX II	24107-040	N
014990	APEX LOCATOR, ENDODONTIC	J. MORITA MFG. CORP.	ROOT ZX II	24107-040	N
014407	AUDIO-VISUAL, PROJECTOR, OTHER	INFOCUS		6515LM21610006	N
015375	BATH, TISSUE FLOTATION	BARNSTEAD/LAB LINE	26106	BARSTEAD 26106Q	N
015376	BATH, TISSUE FLOTATION	BARNSTEAD/LAB LINE	26106	BARSTEAD 26106Q	N
013910	BATTERY CHARGER	ALEXANDER TECHNOLOGIES		6130LM30920001	N
014710	BATTERY CHARGER	MEDTRONIC PHYSIO-CONTROL (	BSS-1	6625011929460	N
014711	BATTERY CHARGER	MEDTRONIC PHYSIO-CONTROL (	BSS-1	6625011929460	N
000360	BATTERY CHARGER	MEDTRONIC PHYSIO-CONTROL (	BSS-1	6625011929460	N
011424	BATTERY CHARGER	STRYKER ENDOSCOPY		6130LM96120006A	N
011425	BATTERY CHARGER	STRYKER ENDOSCOPY		6130LM96120006A	N
012370	BATTERY CHARGER	STRYKER ENDOSCOPY		6515LM00030011	N
012396	BATTERY CHARGER	ZOLL MEDICAL CORP		6515LM97060011A	N
012066	BIOACOUSTIC SIMULATOR	MAICO, DIV BERNAFON-MAICO IN		6515L99DOHRSF	N
013898	BIOACOUSTIC SIMULATOR	MAICO, DIV BERNAFON-MAICO IN		6515L99DOHRSF	N
012065	BIOACOUSTIC SIMULATOR	MAICO, DIV BERNAFON-MAICO IN		6515L99DOHRSF	N
013899	BIOACOUSTIC SIMULATOR	MAICO, DIV BERNAFON-MAICO IN		6515L99DOHRSF	N
015129	BOIL OUT TANK, DENTAL LAB	HANDLER MFG CO INC	26105EL	26105	N
010457	CABINET, DRYING	ACMI CORPORATION		6515LM95070023	N
000065	CABINET, OPTICAL LENS	ACMI CORPORATION		6540002998134	N
014816	CALIBRATOR, PIPETTE	ARTEL	PCS 2	6640LM40352	N
007701	CAMERA, MICROSCOPE	NIKON INC, INSTRUMENT GROUF		6650L910007	N
013799	CAMERA, MICROSCOPE	SONY ELECTRONICS, MEDICAL S		6515LM9309050F	N

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Figure 1–11. Equipment without a Maintenance Plan Report.

Maintenance Interval without a Date Due Report (Inquiry)

The Maintenance Interval without a Date Due Report shows active equipment records that have a maintenance interval associated with a maintenance type, but have no date due. It is used by the maintenance manager to monitor and correct equipment records that have a maintenance interval associated with a Maintenance Type, but have no Date Due and is user generated as a standard inquiry report. If items appear on this inquiry, you need to enter the *Date Due* in the *Maintenance Data* tab of the *Equipment Detail* figure 1–12 is an example of the report.

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT

DATE PREPARED: 01 JUN 2007 — MAINTENANCE INTERVAL WITHOUT A DATE DUE REPORT — AS OF DATE: 01 JUN 2007

MEDICAL EQUIPMENT REPAIR CENTER

This list shows active equipment records that have a scheduled maintenance Interval, but have no associated Date Due. In order for the System to generate a Scheduled Work Order for a Maintenance Type, a Date Due must be entered in the equipment record for each Maintenance Type that has an Interval.

Customer: INTERNAL MEDICINE CLINIC

ECN	NOMENCLATURE	MANUFACTURER	COMMON MODEL	INSP	DATE DUE	PM	DATE DUE	CAL	DATE DUE	SPR	DATE DUE	SUS.
014726	SCALE, PATIENT, CHAIR	HEALTH O METER INC, DIV SUNBEAN		12				12				N

Customer: LAB SERVICES

ECN	NOMENCLATURE	MANUFACTURER	COMMON MODEL	INSP	DATE DUE	PM	DATE DUE	CAL	DATE DUE	SPR	DATE DUE	SUS.
013458	ANALYZER, LABORATORY, URINE, AUTOMATED	BAYER CORP	CT500	12				12				N
013817	FREEZER, BLOOD PLASMA	THERMO-ELECTRIC CO	8526	12				12				N
012741	FREEZER, LABORATORY	GS LABORATORY EQUIPMENT/REVC	2090	12				12				N
015342	FREEZER, LABORATORY	THERMO ELECTRON CORPORATION	3795	12				12				N
015343	FREEZER, LABORATORY	THERMO ELECTRON CORPORATION	3795	12				12				N
006642	REFRIGERATOR, BIOLOGIC	MARVEL INDUSTRIES	4570100	12								N
013530	REFRIGERATOR, BIOLOGIC	POWERS SCIENTIFIC	CT545D	12								N
015365	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015366	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015367	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015368	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015369	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015370	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
015371	REFRIGERATOR, BIOLOGIC	HELMER	HLR256	12								N
013797	SLIDE STAINER, HISTOLOGY	WESCOR INC	7120	12								N
013798	SLIDE STAINER, HISTOLOGY	WESCOR INC		12								N

Customer: LINCOLN AIR NATIONAL GUARD

ECN	NOMENCLATURE	MANUFACTURER	COMMON MODEL	INSP	DATE DUE	PM	DATE DUE	CAL	DATE DUE	SPR	DATE DUE	SUS.
000098	ANALYZER, LABORATORY, HEMATOLOGY, HEMOGLOBIN	HEMOCUE INC		12				12				N
014947	DEFIBRILLATOR, EXTERNAL, AUTOMATED	PHILIPS MEDICAL SYSTEMS NORTH A	HEARTSTREAM	12	MAY 2008			12		24	JUN 2009	N
000114	DENTAL ENGINE	HEALTHCO		12								N
000115	DENTAL ENGINE	HEALTHCO		12								N
000125	EXAMINATION/TREATMENT STAND, OPHTHALMIC	ACMI CORPORATION		12								N
000180	METER, ANEMOMETER	TSI INC		12				12				N
000178	METER, SOUND LEVEL	EXTECH INSTRUMENTS CORP		12				12				N
000034	MICROSCOPE, LIGHT	LEICA MICROSYSTEMS, OPHTHALMIC		12		12						N
000081	MONITOR, VIDEO, MEDICAL	MEDTRONIC PHYSIO-CONTROL COR	FR2+	12								N

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Figure 1–12. Maintenance Interval without a Date Due Report.

Suspended Scheduled Work Orders Report (Inquiry)

The Suspended Scheduled Work Orders Report lists all items of equipment that have a scheduled maintenance requirement and whose suspend scheduled work orders indicator is active and is used by the maintenance manager to monitor and, if necessary, correct equipment records that have had their scheduled work orders suspended. Circumstances which scheduled work orders might be suspended are:

- Items in long-term (non- war reserve materiel (WRM)) storage due to BRAC (base realignment and closure) realignment, natural disasters, construction/remodeling projects, etc.
- Item is currently on a mission (air evacuation (AE)/patient movement items (PMI) or other) and is currently not available.
- Primary parts of the system are out for repair and the unit is not functional.

On suspended items in storage, be sure to tag the equipment with a DANGER tag and a notation of "Equipment must have scheduled maintenance performed PRIOR to use." You don't want to take any changes of someone inadvertently using the equipment for patient care. If there is any question whatsoever, don't hesitate to contact the Clinical Engineering Branch for additional guidance. While suspending scheduled work orders has its place, but needs to be used *cautiously and sparingly*. You should take a very close look at all items on this list to ensure that the *Suspended* status is appropriate. It is user generated as a standard inquiry report. Figure 1–13 is an example of the report.

Date Prepared: 29MAY2007

As Of: 29MAY2007

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT
SUSPENDED SCHEDULED WORK ORDERS REPORT
MEDICAL EQUIPMENT REPAIR CENTER

Org ID	Customer	ECN	Nomenclature	Manufacturer	Common Model	ASSY
FM3004	381 AECOT	009903	LIQUID OXYGEN CONVERTER, MOBILE	ESSEX MEDICAL SYSTEMS PL		N
FM3004	381 AECOT	009904	LIQUID OXYGEN CONVERTER, MOBILE	ESSEX MEDICAL SYSTEMS PL		N
FM3004	381 AECOT	010487	LIQUID OXYGEN CONVERTER, MOBILE	ESSEX MEDICAL SYSTEMS PL		N
FM3004	381 AECOT	010488	LIQUID OXYGEN CONVERTER, MOBILE	ESSEX MEDICAL SYSTEMS PL		N
FM3004	381 CASF TSGT WESTINGTO	012300	LIQUID OXYGEN CONVERTER, MOBILE	ESSEX MEDICAL SYSTEMS PL		N
FM3004	381 DENT LAB	010892	CLEANER, DENTAL STEAM	EMMEVI	AQUA	N
FM3004	381 DENTAL LAB	007484	HANDPIECE, DENTAL	J F JELENKO & CO		N
FM3004	381 EMEDS	010711	BLOOD CELL PROCESSOR	BECKMAN COULTER INC		N
FM3004	381 EMEDS	010771	BATH, WATER	TECHNE INC		N
FM3004	381 EMEDS	010784	INFUSION PUMP, GENERAL-PURPOSE	INFUSION DYNAMICS INC		N
FM3004	381 EMEDS	010848	INFUSION PUMP, GENERAL-PURPOSE	INFUSION DYNAMICS INC	M100B3A	N
FM3004	381 EMEDS	011174	BLOOD CELL PROCESSOR	VERNITRON MEDICAL PRODU		N
FM3004	381 EMEDS	011251	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	PHYSIO CONTROL		N
FM3004	381 EMEDS	011252	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	LIFEPAK 10		N
FM3004	381 EMEDS	011253	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	PHYSIO CONTROL		N
FM3004	381 EMEDS	011254	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	PHYSIO CONTROL		N
FM3004	381 EMEDS	011255	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	PHYSIO CONTROL		N
FM3004	382 BMET ADV 5	013200	DEHUMIDIFIER	THERMA-STOR		N
FM3004	382 BMET BASIC 6	012754	ANALYZER, PHYSIOLOGIC, PULMONARY FUNC	COLLINS MEDICAL INC		N
FM3004	382 BMET BASIC 6	012755	ANALYZER, PHYSIOLOGIC, PULMONARY FUNC	COLLINS MEDICAL INC		N
FM3004	382 BMET BASIC 6	012764	ANALYZER, PHYSIOLOGIC, PULMONARY FUNC	COLLINS MEDICAL INC	CPL PF	N
FM3004	382 BMET BASIC 6	012765	ANALYZER, PHYSIOLOGIC, PULMONARY FUNC	COLLINS MEDICAL INC		N
FM3004	382 BMET BASIC 7	012140	DEFIBRILLATOR/PACEMAKER, EXTERNAL	PHYSIO CONTROL		N
FM3004	382 BMET BASIC 9	012749	X-RAY FILM PROCESSOR, AUTOMATIC, CINE	KODAK CANADA INC, HEALTH		N
FM3004	382 MAINT MGMT	013126	STERILIZING UNIT, STEAM	ENVIRONMENTAL TECTONICS		N
FM3004	383 CARDIO	003046	DEFIBRILLATOR, EXTERNAL, SEMIAUTOMATEI	PHYSIO CONTROL		N

SI075637018

Page 1 of 2

Figure 1–13. Suspended Scheduled Work Orders Report.

Warranty Expiration Report (Inquiry)

The Warranty Expiration Report provides a list of equipment with warranty expiration dates that will occur within a specified time frame. It is used to alert the maintenance manager of equipment with a warranty that is expiring in order to prepare for organizational or contractual maintenance support and to identify possible deficiencies that can be corrected before the warranty period expires. The report is produced quarterly, or as a standard inquiry. Figure 1–14 is an example of the report.

DEFENSE MEDICAL LOGISTICS STANDARD SUPPORT

Date Prepared: 29MAY2007

WARRANTY EXPIRATION REPORT

As Of: 29MAY2007

MEDICAL EQUIPMENT REPAIR CENTER

Part I: Labor End Date Sequence

End Date		ECN	Nomenclature	Manufacturer	Common Model	Serial Number
Labor	Parts					
01JUN2007	01JUN2007	011764	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029260
01JUN2007	01JUN2007	011762	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029426
01JUN2007	01JUN2007	011763	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029434
05JUN2007	05JUN2007	013122	INFUSION PUMP, GENERAL-PURPOSE	ZOLL MEDICAL CORP		13-09066
05JUN2007	05JUN2007	013121	INFUSION PUMP, GENERAL-PURPOSE	ZOLL MEDICAL CORP		13-09067
05JUN2007	05JUN2007	013120	ULTRASOUND THERAPY SYSTEM, PHYSICA	CHATTANOOGA GROUP		15870

Part II: Parts End Date Sequence

End Date		ECN	Nomenclature	Manufacturer	Common Model	Serial Number
Parts	Labor					
01JUN2007	01JUN2007	011764	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029260
01JUN2007	01JUN2007	011762	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029426
01JUN2007	01JUN2007	011763	OSCILLOSCOPE, BMET	TEKTRONIX INC		B029434
05JUN2007	05JUN2007	013122	INFUSION PUMP, GENERAL-PURPOSE	ZOLL MEDICAL CORP		13-09066
05JUN2007	05JUN2007	013121	INFUSION PUMP, GENERAL-PURPOSE	ZOLL MEDICAL CORP		13-09067
05JUN2007	05JUN2007	013120	ULTRASOUND THERAPY SYSTEM, PHYSICA	CHATTANOOGA GROUP		15870

SI075637019

Figure 1–14. Warranty Expiration Report.

Management reports

What do you do with all these reports, inquiries, and metrics? And who really cares anyway? To begin with, you should! All these items are used at various levels to evaluate the effectiveness of the maintenance program. They can be used to justify your budget, manning, and the overall maintenance program. The metrics are also used to brief the Environment of Care (EOC) or Safety Committee.

The specific format for your management reports will vary depending on your mission and the Medical Logistics Flight commander's (MLFC) wishes. You should work with your MLFC to establish metrics that are easy to read and meaningful. It is usually an official letter with attached metrics. The MLFC performs the monthly review or appoints, in writing, the clinical engineering officer (if assigned) to perform the review. The reviewer annotates on the report, if desired and signs. Maintain the annotated reports for one year. You can find samples of management reports on the Clinical Engineering website.

In addition to the monthly reports, you also need to *immediately* report to the MLFC when items reported as "inoperatable" are critical to the operation of a department, such as specialized imaging devices or automated clinical analyzers that may seriously affect patient care. Always keep your chain-of-command promptly informed of any important issues or status changes of critical equipment.

203. Contract maintenance

There is going to be a time in your career when you will need to call for outside help for performing preventive maintenance, calibration, or repair of equipment. This can be performed by having an annual or one-time maintenance contract completed. It is your responsibility to contact and monitor all contractors, providing *medical equipment* service to the MTF.

There is a wealth of information on the Air Force Medical Logistics Office (AFMLO) website about contracts. This lesson will give you a good overview about contracts. For more specific information, check out the Procurement page on the AFMLO website:

https://afml.ft-detrick.af.mil/afmlo/procurement/procurement.cfm

Contract types

There are three types of service contracts that BMETs use: annual, one-time, and rentals/lease/loan. You must consider all options when selecting the contract terms that best suit your needs. Many times the MLFCs will require that you to perform a business case analysis. A first-look is much cheaper than a full service, but on occasion a full service contract is the way to go. It all depends on what terms can be negotiated in the contract.

Before determining requirements with any maintenance contract do your homework first. What equipment is currently under contract or maintenance that can be maintained by in-house staff? If not maintained by staff, is it due to lack of training, experience, price of parts, and/or number of personnel assigned. Is it a rental/lease? If so, should the company the MTF is renting/leasing the equipment from be performing all maintenance for the unit?

Annual contract

You can have an annual contract, which provides varying levels of service: full service, preventive maintenance only, parts only, or first-look; for a period of time, usually an entire fiscal year (1 October to 30 September). Once you determine the level of service that is required, you will need to put together a "procurable" package. A procurable package consists of:

- Funded AF Form 9 or Department of Defense (DD) Form 448, Military Interdepartmental Purchase Request (MIPR).
- Statements of Work (SOW).
- Performance Plan.

- Sole Source Justifications letter (if required).
- Urgent and Compelling Need letter (if required).

Statements of Work

A technical explanation of the work that is required, usually called a SOW, must be very detailed, describing every aspect of what is expected and required of the contractor. A SOW is the key to any contract maintenance agreement. In general, the BMET shop is responsible for ensuring that annual contracts for preventive maintenance, calibration and repair, and one-time repair actions specify:

1. The equipment involved.
2. Whether parts are included.
3. Hours of service.
4. Response time.
5. Performance standards.
6. Frequency of service.
7. Documentation of work performed.
8. Reporting instructions (sign in and out at the BMET shop).
9. Distribution of service reports.
10. Exact specifications and tolerances for calibration actions.
11. MTFs HIPAA (Health Insurance Portability and Accountability Act) Compliance Plan and the ramifications associated with failure to comply.

In addition, the contract must include a means of control for contractors responding during other than normal duty hours. Additional guidance on maintenance contracts is found in AFI 41–201, *Managing Clinical Engineering Programs* and AFI 41–209, *Medical Logistics Support*, Chapter 4.

Sole Source and Urgent & Compelling Justifications

For medical logistics, the two most common exceptional circumstances for *Other than Full and Open Competition* are “Sole Source” and “Urgent and Compelling” requirements. Contracting offices may have different formats for these justifications. Contact the contracting office that will award the contract before preparing a justification letter and ask them for a sample of their format.

Sole Source Justification is necessary for explaining why the recommended company is the only company who can perform the service contract requirement. It is important to provide a clear, strong justification for recommending only one company for the purchase to contracting office to use. If the rationale for a sole source is determined locally, an explanation of the source selection process used to determine the sole source requirement must be documented.

- Define exclusive features of the desired item or service and why these features are necessary and unattainable from other sources.
- Explain why it would not be practical to consider other sources.
- Indicate the extent of your research in selecting the sole source.
- State what the impact would be without the use of this particular item or service, such as, mission impediment, potential loss of life, decreased critical care response time, etc.

Unacceptable reasons include (but are not limited to) personal taste, good relationship with existing vendor, or comfort level with a particular vendor. Contracting offices normally require you to provide a reason for each company that does not meet your needs.

An Urgent and Compelling requirement is similar to a Sole Source except that it must identify what serious injury the government will experience if the need is not fulfilled immediately (e.g., physical, financial or other) and contain a required delivery date. Generally, the following reasons are not valid

for justification for urgency: poor acquisition planning; the need to spend expiring funds; aesthetics; and, impending inspection by regulatory agency.

One-time contract

A one-time contract is performed using local services and the Government Purchase Card (GPC). It should not exceed $2500 (e.g., microscope cleaning, repairs sent back to manufacturer). If the service is going to exceed $2500, the same requirements apply as if you were requesting an annual contract.

Depot

Depot repair is used for one-time repairs on a variety of equipment. Army Medical Department (AMEDD) Medical Maintenance Operations Divisions US Army Medical Materiel Agency, (USAMMA), located in Ft Detrick, Maryland (MD) has operational responsibility for the program and acts as the focal point for all medical equipment maintenance: http://www.usamma.army.mil/maintenance/operations_divisions.cfm

The use of depot level maintenance should be explored for the required services before arranging a contract. You can contact them for a quote. If you decide to use them, you'll need to coordinate with your Resource Management Office (RMO) office for a DD Form 448, Military Interdepartmental Purchase Request (MIPR) to pay for the service. The Army Depot program is divided into three regions, which are listed below with the equipment that they support. You should initiate contact with your region. They will direct you to another region if they don't support the equipment that you need repaired.

1. Tobyhanna, Pennsylvania (PA): DSN 795–7744, commercial 570–895–7744.

Medical Maintenance Operations Division, Tobyhanna, PA

Alabama	Maryland	Ohio	Virginia
Connecticut	Maine	Pennsylvania	Virgin Islands
District of Columbia	North Carolina	Rhode Island	Vermont
Florida	New Hampshire	Puerto Rico	West Virginia
Georgia	New Jersey	South Carolina	
Massachusetts	New York	Tennessee	

- Microscopes.
- Optometry equipment (phoropters, lensometers, slit lamps, keratometer, & vision testers).
- Audiometers.
- Dental handpieces.
- Imaging equipment (Orex, Compano, and ACR 2000 Computed Radiography (CR) Readers).

2. Tracy, California (CA): DSN 462–4556, commercial 209–839–4556.

Medical Maintenance Operations Division, Tracy, CA

Mississippi	New Mexico	Texas	Hawaii
California	Nevada	Oregon	Arkansas
Arizona	Oklahoma	Washington	Louisiana

- X-ray equipment (portable & dental).
- X-ray tubeheads.
- Test equipment (various).
- Imaging equipment (Orex, Compano, and ACR 2000 CR Readers).

3. Hill Air Force Base (AFB), Utah (UT): DSN 586–4947, commercial 801–586–4947.

Medical Maintenance Operations Division, Hill Air Force Base, UT

Alaska	Iowa	Missouri	Utah
Colorado	Kansas	Montana	Wisconsin
Idaho	Kentucky	Nebraska	Wyoming
Illinois	Michigan	North Dakota	
Indiana	Minnesota	South Dakota	

The Hill Army Depot is tenant unit located on Hill AFB, and is primarily used for repair parts. If you have a part that you cannot find from any other source, they may be able to find it for you.

Rental/lease/loan

Equipment is considered "loaned" if it is provided by the company at no charge when the MTF agrees to purchase consumable supplies. Laboratory equipment is popular for this under a reagent rental agreement. Equipment can be rented/leased if it is a temporary requirement or is more cost effective than purchasing. Normally, maintenance is included in the rental/lease/loan contract. The BMET shop should be involved in this process to review the specifics of the contract. The equipment still needs to be gained in DMLSS as maintenance significant in order to track the maintenance and recall/alert notification.

Equipment provided for demonstration or very short term use is also considered "loaned". In these cases, a *Statement of Understanding* will need to be completed before the equipment is put in use. The vendor, using activity, medical equipment management office (MEMO), BMETs, and the Contracting Office sign this form. AFI 41-209, Attachment 29 is a sample *Statement of Understanding*.

Maintenance of contracts and quality assurance evaluators

Once a contract is in place, it must be maintained to assure that the Air Force is getting what it is paying for. All contracts can be maintained using DMLSS Service Contracts module or a six part folder. Contract documentation and a record of service calls should be properly annotated.

Once a maintenance contract is in place, the MLFC assigns a quality assurance evaluator (QAE) to oversee the contract. For maintenance contracts, QAE duties are usually assigned to the local BMET. The QAE is responsible for:

- Monitoring the contractor's performance and ensuring that the contractor meets the terms of the contract.
- Ensuring that the equipment users understand their roles in relation to the contract.
- Maintaining documentation of any actions relating to the contract. This includes detailed documentation on contractor performance, especially when problems occur with contractor performance.

Documentation of unsatisfactory performance should include dates, personnel involved, problem description, and follow-up actions. This documentation will be your only record of the contractor's performance, and should their performance be substandard, it is your only means of having a contract discontinued.

To be an "official" QAE, you'll need to complete training. Even if you are not an "official" QAE, the training is very beneficial. The contracting agency sets the specific QAE requirements. There is a wealth of information on the AFMLO website about QAE and contracting officer's representative (COR).

- https://medlog.detrick.af.mil/mlc/site_apps/afmlo/procurement/contracting/corcourse.cfm

Contract sources

There are a variety of contracting agencies that can issue a contract. All contracting agencies are governed by the Federal Acquisition Regulation (FAR), which is a complex 1900 page document. It can be found here: http://www.arnet.gov/far/

Dealing with these agencies is probably the most challenging and frustrating task you will face as a BMET. Even though they are all using the same regulation, the way they interpret it can vary between from base to base.

Defense Supply Center Philadelphia

The Defense Supply Center Philadelphia (DSCP) is an organization that handles all medical items under the Defense Logistics Agency (DLA), which is the Department of Defense's (DOD) largest combat support agency, providing worldwide logistics support in both peacetime and wartime to the military services as well as several civilian agencies and foreign countries. DLA headquarters is located at Fort Belvoir in northern Virginia (VA). They operate the DMMonline website, which is the official site for the Directorate of Medical Materiel (DMM) of the DSCP, a primary level field activity of the DLA. The site provides the military medical community, as well as other Federal agencies, medical products and services needed every day for every crisis around the world. Major capabilities housed within the site include web-based ordering from the Electronic Catalog (ECAT) system, the Prime Vendor Program, and Business Intelligence. DSCP is the contracting agency that procures all medical investment equipment including imaging systems.

The Veterans Affairs Special Services

The Veterans Affairs Special Services (VASS) Contracting Office is co-located with the Air Force Medical Operations Agency (AFMOA) and the Air Force Medical Service Agency (AFMSA) at Ft Detrick, MD. The VASS focus is on leveraging purchasing power for medical equipment, services, and ancillary medical supplies for the Air Force Medical Service (AFMS). The contracting instruments negotiated by the VASS are intended for use by the Air Force and the Veterans Administration MTFs. The VASS staff works closely with an active duty Air Force liaison team to ensure the VASS staff and customers work in synergistic partnership.

The VASS collects a surcharge to recover costs. A charge of up to two percent of the total cost of the order, or a minimum of $175, shall be collected by the VASS for placing orders against existing contracts and for creating new open market contracts. The maximum charge will not exceed $25,000 to award a contract. Should a customer request a change to an existing contract, task order or delivery order, and a modification is required, each modification will be assessed a surcharge.

More information about the VASS contracts can be found on the AFMLO website:

- https://medlog.detrick.af.mil/mlc/site_apps/afmlo/va/cust.cfm

Base contracting

If services are not available through DSCP or the VASS, then a contract must be negotiated locally. This process involves the local MLFC and the base contracting office. You can get specific training from your base contracting squadron and/or Medical Logistics personnel.

204. Operating instructions

Operating instructions (OI) assign responsibilities, direct actions, and prescribe procedures within a subordinate function (i.e. a staff office, a branch, a division, a squadron, etc.). Formatting and coordination requirements are established in unit-level guidance. OI control numbers are directed in unit-level guidance. Air Force level guidance on format can be found in AFI 33–360, Chapter 2. OIs will not be posted to the e-Publishing website and will not be listed in the Product Index.

WRM maintenance

The only OI that is mandatory (per AFI 41–201) is a WRM Maintenance Operating Instruction (MOI) for BMETs assigned to mobility assemblages. The MOI must be maintained in a deployable mode and include:

- The BMET's pre-deployment, deployment, and post-deployment responsibilities.
- Procedures for requesting and processing work orders, repair parts, and spare parts.
- Repair parts inventory management and control procedures for spare parts assigned to the mobility assemblage.
- Procedures for identifying and controlling technical literature, tools and test equipment assigned to the mobility assemblage.

NOTE: For ease of maintenance, you might have equipment data files, technical literature, test equipment and medical equipment sublocated from the rest of the assemblage. If it were not pre-addressed, it could be easy to mobilize the package and forget some items that were sublocated.

You may not necessarily need OIs for your shop if you find the guidance in AFI 41–201 to be adequate. If you choose to have OIs for your shop, they must be reviewed/updated annually. However, OIs will probably be necessary for areas outside of your direct control, such as MTF operating instruction to give guidance to the MTF staff on their responsibilities with respect to medical equipment and the maintenance program. Another might be to give guidance to the rest of the base for the public access defibrillator program.

Public access defibrillator

What's the difference between an automatic external defibrillator (AED) and a public access defibrillator (PAD)? The equipment is identical; it is *who* uses them and *where* they are used that differentiates them. There are two types of first responder uses: within the MTF and outside the MTF.

Within the MTF

AEDs are placed in areas within the hospital where starting defibrillation would otherwise take longer than three minutes (e.g., in an outpatient clinic). These units would typically be employed by first-responders (doctors, nurses, or medical technicians). However, depending on the situation and the personnel who are in the immediate vicinity, the devices could also be used by people with no previous medical training who have been trained in cardiopulmonary resuscitation (CPR), including AED use. (For instance, if a nurse was not around, a trained security guard could operate the device.) This use of an AED is basically the same as PAD, which we describe below.

Outside the MTF

Basic life support- (BLS) trained emergency medical service (EMS) personnel, police officers, and firefighters would bring an AED with them when responding to medical emergencies in the community. In many public facilities, you will find PADs available for use to meet emergencies.

As a noncommissioned officer in charge (NCOIC) of BMETs, you ensure the correct DMLSS nomenclature is utilized: "Defibrillator, Public Access (PAD)." Also, AEDs used within the hospital or a WRM assemblage and *not* part of the base PAD program must use the device name: "Defibrillator, External, Automated."

For additional information please refer to the PAD program guidance document on the AF Clinical Engineering website in library tab under Guidance documents.

- https://medlog.detrick.af.mil/mlc/site_apps/clineng/library/index.cfm?action=list&type=5

205. Training

Knowledge is power! Training is never-ending in the Air Force…and life. You should continually assess the need for training for your shop personnel. This can be on-the-job-training (OJT), advanced schools at Sheppard AFB, manufacturer's school, or third-party training.

Sheppard AFB advanced training

The advanced training courses at Sheppard AFB are relatively easy to get. Your MTF training office or major command (MAJCOM) functional manager should ask what your training needs are for the year. The Air Force uses these projections to determine how many slots the MAJCOM will gain each year. Once the exact number of slots is allocated to each MAJCOM, the functional manager will split them up between the bases within his/her MAJCOM. You need to make sure your MAJCOM functional manager knows what your needs are so he/she can assign the school to your base. The base training office actually puts a name to the school slot.

Manufacturer/third-party school

There are a couple different ways to get a manufacturer's school. The easiest way is to include training in the purchase of the equipment. This usually only pays for the tuition, so your unit will have to fund a temporary duty (TDY) to pay for travel, lodging, and per diem. Some manufactures have free schools; you just have to get there.

Even if your unit needs to fully fund the whole thing, this is still easy to justify. Basically you compare what it would cost for a full service contract to the total cost to attend the training. Usually you can show a savings the first year. When picking someone to attend advanced training, you must consider, their current skill level, how long they have been assigned, and permanent change of station (PCS)/separation intentions. You wouldn't want to send someone to a high-dollar school if you know they are tying to PCS or get out of the Air Force in six months. Other factors to consider are their amount of motivation. Even if they attend the school and an unexpected PCS comes up, the Air Force is still benefiting.

One other way of receiving training is to request the manufacturer provide the class at your base. This costs more than sending one person to the training, but you will be able to get the training for your entire shop. You can also open it up to surrounding facilities to possibly share costs.

Self-Test Questions

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

001. Maintenance program organization.

1. Explain three ways to organize your shop.

2. Describe how to create maintenance teams within DMLSS.

3. How do you assign maintenance teams to multiple equipment items?

4. Why is it more efficient to calibrate multiple like items at the same time?

5. How can you get a “snapshot” of your overall workload?

6. Why would you want to lighten up your workload in certain months?

7. Explain how to view the detailed workload for all the defibrillators in your MTF.

8. What does “I”, “P”, “C”, and “S” represent in the Detailed Scheduled Workload report?

9. How often should you review and correct the Detailed Scheduled Workload report?

10. How can you improve your unscheduled workload?

202. Performance standards

1. What are four qualities of a performance standard?

2. What is the industry standard for monthly scheduled work order completion?

3. Why do you need to set weekly milestones?

4. How can you motivate your technicians to meet or exceed the monthly goals?

5. How are performance standards used to correct problems?

6. How often should a customer survey be performed?

7. What is the purpose of metrics and performance standards?

8. What is a metric?

9. What are the guidelines of a good metric?

10. List three popular metrics.

11. Explain the difference between a report and inquiry.

12. Match each report in column B with the items in column A. Items in column B may be used once, more than once, or not at all. Questions may have multiple correct answers. (Hint: some of the figures may help you.)

Column A

____ (1) Can be created for Maintenance Activity, Team, or Technician
____ (2) Provided to evaluate the equipment maintenance program
____ (3) Lists beginning and ending work order balance
____ (4) Hours for each Maintenance Team
____ (5) Shows open work orders over 30/60/90 days
____ (6) Hours spent on *Repair* actions
____ (7) Number of prior month open work orders for each status
____ (8) Archived for 1 month
____ (9) Summary of 12 month trend
____ (10) 12 month averages for outstanding status
____ (11) Archived for 24 months
____ (12) Contains 3 parts.
____ (13) Number of current open work orders for each status
____ (14) Shows equipment items that will not produce scheduled work orders.
____ (15) Used to monitor and evaluate the work accomplished during the month.
___ (16) Contains time sheet information.

Column B

a. Maintenance Management Report
b. Productivity Report
c. Work Order Management Summary
d. Workload Report.
e. Contract Expiration Report
f. Equipment Without a Maintenance Activity Report
g. Equipment Without a Maintenance Plan
h. Maintenance Interval Without a Date Due Report
i. Suspended Scheduled Work Orders Report
j. Warranty Expiration Report
k. Workload Inquiry

203. Contract maintenance

1. List and describe the three types of contracts.

2. What are the levels of service available in an annual contract?

3. What elements are necessary for a “procurable” package?

4. What items are specified in a SOW?

5. Where can you find guidance on maintenance contracts?

6. What is the purpose of a “Sole Source” justification?

7. What are unacceptable reasons for a Sole Source?

8. What is the purpose of an “Urgent and Compelling” requirement?

9. Who has operational responsibility of the Army’s Depot Program?

10. What services does the Tobyhanna Army Depot provide?

11. What services does the Tracy Army Depot provide?

12. What services doe the Hill Army Depot provide?

13. Describe when equipment is considered “loaned”.

14. What are the Quality Assurance Evaluator’s responsibilities?

15. What regulation do all contracting agencies follow?

16. What contracting agency handles the purchase of imaging systems?

17. What is the maximum and minimum VASS surcharge?

204. Operating instructions

1. What must be included in a WRM MOI?

2. What is the difference between an AED and a PAD?

3. Where can you find the guidance document for the AF PAD program?

205. Training

1. What are some sources of training?

2. Explain how to get advanced training at Sheppard AFB.

3. What do you consider when picking someone to attend advanced training?

1–2 Medical Readiness/War Reserve Materiel Equipment

With today's operations tempo, just about every BMET in the Air Force has deployed at least once in their career. As a BMET manager, one of your responsibilities is to manage the air expeditionary force (AEF) assignments and deployment taskings for your shop. You should be familiar with some basic medical readiness reports, listings, and taskings. In addition, if you have WRM equipment assigned to your base, you will be ultimately responsibly for the maintenance, even if there is a contractor performing the work.

206. Medical Readiness Administration

As with any activity that takes place in the Air Force, WRM deployment must be well planned out to ensure success. Because the essence of WRM is deployment in a military conflict, there is much at stake and failure to properly plan could have disastrous consequences. In your position, you will most likely be involved in the planning of WRM deployments. We will begin our discussion of WRM with some terminology with which you need to be familiar.

Status of Resources and Training (AFI 10–201)

The Status of Resources and Training (SORTS) report is basically the "report card" of how well your MTF is meeting its readiness obligations in both personnel and supplies/equipment. SORTS is an internal management tool for use by the Chairman of the Joint Chiefs of Staff (CJCS), Services, Unified Commands, and Combat Support Agencies. It is the single automated reporting system within the DOD functioning as the central registry of all operational units of the US Armed Forces and certain foreign organizations. SORTS has a threefold purpose:

1. Provides data critical to crisis planning.
2. Provides for the deliberate or peacetime planning process.
3. Used by the Chief of Staff United States Air Force (CSAF) and subordinate commanders in assessing their effectiveness in meeting Title 10, "*United States Code*," responsibilities to organize, train, and equip forces for combatant commands.

As a monitoring system of measured units and resources, SORTS indicates the C-level of selected resources and training status required to undertake the full mission set for which a unit was organized or designed. It also collects and distributes service-unique information regarding a measured unit.

The Air Force uses SORTS status information in assessing readiness, determining budgetary allocation, and management action impacts on unit level readiness, answering congressional inquiries, analyzing readiness trends, and supporting readiness decisions.

SORTS provides broad bands of information on selected unit status indicators which include the commander's assessment of the unit's ability to execute the mission set for which it is organized or designed. Measurement criteria is designed and developed by functional area managers (FAM) to provide valid assessments regarding unit readiness. Commanders, or their designated alternates, assess measurements against their mission set to determine if they provide a realistic indication of the unit's readiness. It is critical that reporting commanders identify those areas that are rated less than desired in order to promote and justify corrective action (including funding, personnel, and equipment allocations.)

Medical Resource Letter

The Medical Resource Letter (MRL) is a coordinated effort of Air Force and MAJCOM level Medical Readiness, Medical Staffing and Medical Logistics personnel and key members from the Air Expeditionary Force Center at Langley AFB, VA. Its purpose is to provide for strategic planning in the maintenance and movement of medical war reserve assets. This document is published annually, unless major revisions are required, and reviewed on a semiannual basis. Upon the USAF surgeon general's (SG) approval and signature, the MRL becomes the official planning document for all AF medical WRM. The MRL is not actually a letter, but is part of a database contained as a subsystem within a larger system called the Medical Readiness Decision Support System (MRDSS). This database is managed by both readiness and logistics at the Air Staff level and contains, among many other things, some very important facts about the current and projected medical equipment WRM assemblages AF-wide. The MRL is the basis for designed operational capabilities (DOC) statements that actually task your unit for WRM assets.

Designed operational capabilities statement

Another document that directly impacts the MTF is the DOC statement. The DOC statement is classified as SECRET and, in some rare instances, can be classified higher. The DOC statement is prepared by the MAJCOM and specifically summarizes what the facility is tasked to do during wartime as outlined in operations plans and other directives. It summarizes the DOC of the unit and contains unit identification, mission tasking narrative, mission specifics, and resources to be measured. It gives commanders a clear definition of their unit's wartime capability, based on the authorized manpower and materiel strength of the unit.

The DOC statement also lists the required response times for specific missions. Response times are very important and are measured during most exercises and inspections. Like most plans, the DOC statement is reviewed by your MAJCOM on an annual basis.

Concept of operations

The concept of operations (CONOPS) is often referred to as the "commander's concept." It details, in broad outline form, the assumptions and intent of an operation and is designed to give an overall picture of an operation. In short, it describes how your medical unit will be utilized in the event of a contingency. It requires meeting the AFMS's mission and objectives through planning for deployment and operations in a deployed location.

Unit type code

The unit type code (UTC) is a 5-character alphanumeric code controlled by the Joint Chiefs of Staff (JCS). The assignment of a UTC categorizes each type of organization into a class or kind of unit having common distinguishing characteristics, such as:

1. Medical.
2. Communications.
3. Security Police.
4. Civil Engineering.

In addition, UTCs are used as a statement of force capability that equates to specific manpower and logistics support requirements. It lets planners know what resources you have so they can guide the mission.

Mission capability statement

The mission capability statement (MISCAP) defines the mission the UTC is capable of accomplishing. It contains the following:

1. Type and amount of workload the UTC is capable of performing.
2. Type of base where the UTC may be employed.
    - Bare base.
    - Main operating base.
    - Forward operating base.
    - Advanced operating base.
3. Other UTCs which are required to support the defined capability
4. Any other information pertinent to that UTC. The MISCAP is the only part of the UTC that could be classified.

NOTE: DOC statements define what UTC(s) a unit is designed to support. A MISCAP statement defines in a short paragraph what specific capability the UTC(s) can provide and what base operating and transportation support is required. The CONOPS discusses the bases for each specific UTC and is the basis for each assemblage.

The following personnel UTCs (with MISCAP) have BMETs assigned to them. In addition, BMETs can be assigned or substituted to other UTCs as needed. It all boils down to the needs of the mission.

FFABC – USAF AB CLINIC TEAM

BMET Assigned: 4A271 - 1

MANPOWER TO PROVIDE 24 HOUR SICK CALL BASE OPERATING SUPPORT MEDICAL AIR BASE CLINIC TO MOBILIZED NON-COLLOCATED AFRC WINGS SUPPORTING UP TO 1000 PERSONNEL. PROVIDES FLIGHT MEDICAL SUPPORT AND MEDICAL MANPOWER

TO ACCOMPLISH RCPHA PROCESS FOR 500 AFRC WING POPULATION TO ENSURE WING'S MEDICAL REQUIREMENTS FOR DEPLOYMENT ARE MET. IN CONJUNCTION WITH UTCS FFDAFAND FFDAG PROVIDES CAPABILITY TO SUPPORT ENTIRE AFRC WING POPULATION FOR RCPHA PROCESS. MAY SUB FOR ONE OF TWO 48R3 REQUIREMENTS WITH ONE OF THE FOLLOWING: ANY 44X3, 42G3, 46N3H. 42S3 MAY SUB FOR 46P3. OTHER AFSC SUBSTITION IAW ANNEX F TO WMP–1. RANK AND SKILL LEVEL SUBSTITUTIONS ALLOWED IAW AFI 10–403. DEPLOYABLE IN SUPPORT OF AEF ROTATIONS, AND FOR RECONSTITUTION AFTER PARENT WINGS HAS DEPLOYED. OPR: HQ AMC/SGXP DSN: 779–6205. LAST REVIEWED 17 OCT 2006

FFBMM – BIOMED EQUIP MAINT TEAM

BMET Assigned: 4A251 – 2, 4A271 – 1

PROVIDES SUPPORT PERSONNEL TO AUGMENT BIOMEDICAL EQUIPMENT MAINTENANCE AND FACILITY MANAGEMENT SUPPORT TO AIR FORCE THEATER HOSPITALS AND OTHER CONTINGENCY OPERATIONS. PERSONNEL DEPLOYED WITH THIS PACKAGE ARE AUTHORIZED 70 LBS PER INDIVIDUAL ADDITIONAL WEIGHT, FOR PROFESSIONAL ITEMS (BMET TOOL KIT). IT SHOULD ONLY BE DEPLOYED TO LOCATIONS WHERE EXISTING LOGISTIC SUPPORT IS ESTABLISHED (MEDLOG/DMLSS). THIS MAY INCLUDE A FIXED FACILITY OR ANY LOCATION WHERE AN EMEDS OR AN AFTH HAS BEEN DEPLOYED. SKILL-LEVEL SUBSTITUTIONS UP ARE PERMITTED. ANY LOWER SKILL-LEVEL SUBSTITUTIONS ARE ON A CASE-BY-CASE BASIS: THE LOSING MAJCOM FUNCTIONAL MANAGER SHOULD COORDINATE SUBSTITUTIONS WITH THE DEPLOYED COMMANDER (THROUGHTHE PERSONNEL READINESS UNIT). AFSC SUBSTITUTIONS AUTHORIZED IAW WMP 1, ANNEX F. NO OTHER SKILL-LEVEL SUBSTITUTIONS AUTHORIZED. DEPLOYS TO MOB/COB/SB/BB AND LB LOCATIONS. ECS IS REQUIRED. PILOT UNIT: 59 MDW/LACKLAND. OPR: HQ ACC/AGX. REVIEWED: NOV 05.

FFEP2 – EMEDS BASIC

BMET Assigned: 4A271 – 1

PROVIDES SUPPORT PERSONNEL FOR EMEDS C4I AND LOGISTICS SUPPORT. UTC IS PART OF EXPEDITIONARY MEDICAL SUPPORT (EMEDS)-BASIC TEAM, COMPRISED OF UTC'S FFPM1/2/4/5, FFMFS, FFMF1, FFEP1/2/6, FFEPE, FFDAB/FFPCM, FFFOC, FFFOE AND FFEE1/4/7/8. EMEDS-BASIC PROVIDES 24-HR SICK CALL, DENTAL SERVICES, AND EMERGENCY MED CARE FOR DEPLOYED AEROSPACE EXPEDITIONARY FORCES(AEF). ASSUMES ROUTINE AE SUPPORT IS AVAILABLE WITHIN 24 HRS AND URGENT AE W/IN 12 HOURS. ANY C4XXX MAY SUB FOR 040C0IAW WMP 1, ANNEX F, AND AFI 10–403. ANY 4XXXX (IM/IT CORP NEUTRAL) WITH NETWORK MGT AND WORKGROUP MGT EXPERIENCE MAY SUB FOR V4A071. 041A3 MUST HAVE READINESS AND LOGISTICS EXPERIENCE. ANY 4XXXX E–8 OR HIGH MAY SUB FOR 4A091. NO OTHER GRADE OR SKILL-LEVEL SUBS AUTHORIZED WITHOUT MEFPAK APPROVAL. DEPLOYS TO MOB, COB, SB, BB AND LB LOCATIONS. ECS REQUIRED. PILOT UNIT: 1 MDG/LANGLEY. OPR: HQ ACC/SGX. REVIEWED: NOV 06.

FFEP3 –EMEDS +10

BMET Assigned: 4A251 - 1

PROVIDES SUPPORT PERSONNEL FOR 10 HOSPITAL BED CAPACITY EMEDS. PROVIDES 24-HR SICK CALL AND EMER MED CARE FOR DEPLOYEDAEROSPACE EXPEDITIONARY FORCES (AEF). UTC AUGMENTS EXPED MED SUPPORT (EMEDS)-BASIC TEAM AND DEPLOYS IN CONJUNCTION WITH UTC FFPM1/2/3/4/5 AND FFEE1/2/4/5/7/8. FFEP1/2/6, FFEPE, FFMFS, AND FFMF1 TO COMPRISE SECOND INCREMENT OF EMEDS. 10-BED

EMED PROVIDES ACLS/ATLS EMER SVCS, LIMITED INPATIENT/OUTPATIENT CAPABILITY. LAB, PHARMACY, X-RAY, DENTAL SVCS, PLANNING, ADMIN, AND LOG/BMET SUPPORT TO 3000–5000 AEF PSNL FOR 30 DAYS W/O RESUPPLY IN LOW CBRN THREAT. ASSUMES ROUTINE AE SUPPORT IS AVAILABLE WITHIN 24 HRS AND URGENT AE WITHIN 12 HRS. AT LEAST ONE 046N MUST BE AN 04 OR HIGHER. AFSC 046A3 (W/APPROP CLINICAL EXP) MAY SUB FOR 046N3. 046N3J WITH ICU EXPERIENCE MAY SUB FOR 046N3E. 048G3 OR 044F3 MAY SUB FOR 048R3. ALL OTHER SUBSTITUTIONS AUTHORIZED IAW WMP–1, ANNEX F. GRADE AND SKILL-LEVEL SUBS IAW AFI 10–403. DEPLOYABLE TOMOB, COB, SB, BB AND LB LOCATIONS. PILOT UNIT: 1 MDG/LANGLEY. ECS REQUIRED. REVIEWED: NOV 06.

FFHA4 – CT SCAN TEAM

BMET Assigned: 4A271 – 1

PROVIDES SUPPORT PERSONNEL TO ESTABLISH CT SCAN CAPABILITY IN SUPPORT OF SPECIALTY SURGICAL AUGMENTATION PKGS AT A 50 BED EMEDS/AFTH (MINIMUM). MAY BE DEPLOYED IN SUPPORT OF LEVEL 3 MEDICAL UNITS. USUALLY DEPLOYS IN CONJUNCTION WITH UTC FFHAG (MED CT SCANNER EQUIP). RADIOLOGY TECHNICIAN REQUIRES TRAINING AND PRACTICAL EXPERIENCE WITH CT. BIOMEDICAL EQUIPMENT REPAIR TECHNICIAN REQUIRES FORMAL EQUIPMENT-SPECIFIC TRAINING. AFSC CROSS-UTILIZATION IS NOT AUTHORIZED. GRADE/SKILL LEVEL SUBSTITUTION IN ACCORDANCE WITH AFI 10–403. DEPLOYS TO MOB, COB, SB, BB AND LB LOCATIONS. ECS IS REQUIRED. OPR: HQ ACC/SGX. REVIEWED: AUG 06.

FFVCF –CASF

BMET Assigned: 4A271 – 1

PROVIDES BASIC COMMAND FUNCTION FOR CASF+25 THROUGH CASF+250 SIZES. ALWAYS DEPLOYED WITH ADDITIONAL CASF UTCS, BRINGS ADDITIONAL NEW SERVICES OF BIO MEDICAL EQUIPMENT REPAIR AND SUPPLEMENTS EXISTING AFSC OF ADMIN, PHYSICIAN, MENTAL HEALTH, AND LOGISTICS. SPECIALISTS IN AEROMEDICAL STAGING, FFVCF BRINGS THE COMMAND, CONTROL, AND COMMUNICATION EXPERTISE TO CASF CAPABILITY. PRESENT IN CASF BED SIZES AS FOLLOWS: 1 FOR CASF+25, 1 FOR CASF+50, 1 FOR CASF+100, AND 2 FOR CASF+250. MUST DEPLOY WITH FFVNF AND FFVSF TO COMPLETE CASF PACKAGES, ENSURES PATIENTS ARE ADMINISTRATIVELY PREPARED FOR FLIGHT AND REGULATED IN THE A/E SYSTEM. THE PRIMARY ROLE OF THE FFVCF IS TO PROVIDE CLINICAL AND ADMINISTRATIVE EXPERTISE OFPATIENTS MOVING IN THE A/E SYSTEM. SOURCE: AD, AND AFRC. LIMITED FACTORS: ECS REQUIRED FROM AF, DOD, USER SERVICE, OR HOST NATION. 046P3 MENTAL HEALTH NURSE CAN BE SUBSTITUTED WITH A 046P3A OR WITH A 046N3. THE 042G3 (PA) CAN BE SUBSTITUTED WITH AN 4N0X1C. ONE OF THE 048R3 POSITIONS CAN BE SUBSTITUTED WITH ANY 04XXX PHYSICIAN WHO HAS COMPLETED THE AEROSPACE MEDICINE PRIMARY COURSE. PRIOR COORDINATION WITH THE MAJCOM WILL BE ACCOMPLISHED BY THE UNIT USING THIS SUB RULE. OTHER SUBS IAW AFI 10–403 AND WMP 1 ANNEX F. DEPLOYABLE TO BB,SB,LB,MOB,COB. OPR HQ AMC/SGXP, DSN 779–6205. LAST REVIEWED 3 JAN 06.

207. WRM maintenance/contract oversight

All WRM equipment at Active Duty, Guard, and Reserve bases CONUS and in Korea are maintained by the in-garrison maintenance contract. While this frees up the active duty BMETs to dedicate their time in performing duties in their MTF, they don’t have exposure to the equipment that they used to. This can be a big disadvantage when it comes to deployments. We can still coordinate with the contract BMET to train on the WRM equipment, but it just takes a dedicated effort and coordination

with the WRM BMET. The WRM equipment is better maintained due to the BMET contractors being able to dedicate themselves only to the WRM equipment.

MERC quality assurance

The contractors are considered AFMS employees, therefore WRM equipment should be treated just like other equipment when it comes to MERC support. The contract does not spell out any specific quality assurance criteria for the equipment maintenance, therefore, the only contract oversight are the MERC calibrations and quality assurance checks as with any other MTF equipment. The MERC should contact the active duty BMETs and contract BMET in their pre-visit notification.

Suggesting changes to a UTC/allowance standard

If you notice any item that is necessary for the operation of the equipment that is *not* on the allowance standard (AS) such as a patient cable, centrifuge rotor, defibrillator paddles, etc., you can make a suggestion to have that item added to the AS by contacting the Clinical Engineering Branch.

Self-Test Questions

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

206. Medical Readiness Administration

1. What is the purpose of the SORTS report?

2. Who manages the MRL database?

3. What is contained in the DOC statement?

4. What is outlined in the CONOPS?

5. Who controls the UTC?

6. What is contained in the MISCAP statement?

7. Match the WRM definitions in column A with their corresponding terms in column B. The terms in column B may be used once, or more than once.

Column A	*Column B*
____(1) Provides strategic planning in the maintenance and movement of medical war reserve assets.	a. Unit type code (UTC)
____(2) Describes how your medical unit will be utilized in the event of a contingency.	b. Medical Resource letter (MRL)
____(3) Categorizes each type of organization into a class or kind of unit having common distinguishing characteristics.	c. Designed operational capabilities (DOC) statement
____(4) Often referred to as the "commander's concept."	d. Mission capability statement (MISCAP)
____(5) Normally classified as SECRET and sometimes higher.	e. Concept of operations (CONOPS)
____(6) Short paragraph that specifies what a UTC can do.	
____(7) Used as a statement of force capability that equates to specific manpower and logistics support requirements.	
____(8) A 5-character alphanumeric code controlled by the Joint Chiefs of Staff.	
____(9) Contains unit identification, mission tasking narrative, mission specifics, and resources to be measured.	
____(10) Upon USAF/SG approval, becomes the official planning document for all AF medical WRM.	
____(11) Lists required response times for specific missions.	
____(12) Used as the basis for DOC statements.	

8. What UTCs have BMETs assigned to them?

207. WRM maintenance/contract oversight

1. What bases have an in-garrison WRM maintenance contract?

2. What is the disadvantage to having the in-garrison WRM maintenance contract?

3. What does the contract oversight entail?

4. When would you suggest a change to an allowance standard?

1–3. Assessments

By now, you have a general idea of the objectives and responsibilities of the biomedical equipment maintenance program. You have also seen some of the standards that guide the program. But how do we determine if those objectives, responsibilities, and standards are being met at every facility? A method must exist to make this determination. One method of checking compliance is through an inspection system.

During your career as a BMET, you will experience many inspections, including self-inspections, MERC management assistance visits, MAJCOM staff assistance visits, Health Services Inspection (HSI), and your MTF's accreditation inspection by Joint Commission (formerly JCAHO) or Accreditation Association for Ambulatory Health Care (AAAHC). The Air Force MTF inspection program works on a building block concept from the self-inspection to the HSI. In addition, Joint Commission or AAAHC develop and verify *civilian* healthcare standards. In this lesson, you will learn about the various inspection systems used in Air Force medical facilities and the medical equipment management plan. Let's get started with military inspections.

208. Military inspections

All of these inspections have one thing in common; your shop's performance is graded using checklists. These checklists contain the standards of performance required in your equipment maintenance program. A review of these lists will tell you what is expected of your maintenance shop.

You should be familiar with the standards in these checklists. If you find yourself in charge of a maintenance shop, this information becomes infinitely more important to you and your efforts to create and maintain a quality equipment maintenance program. Obtain a copy of these checklists, read them to see what is expected of you and your shop, and make sure your shop is doing the job.

Self-inspection

A self-inspection is an organized method of internal review that allows a manager to view the entire maintenance program. The key elements that should be inspected during a self-inspection are the mission, resources, training, and personnel within your shop. The BMET supervisor uses a self-inspection checklist to perform periodic self-inspections in order to ensure the function is well managed and to identify and initiate solutions to problems before outside inspections. A self-inspection checklist can be locally developed. A good starting point is the checklist located on the Clinical Engineering website at:

- https://medlog.detrick.af.mil/mlc/site_apps/clineng/library/index.cfm?action=list&type=22

This checklist can be used individually as published or combined with local checklists for a self-inspection checklist. Existing checklists that you can use to develop a local self-inspection checklist include:

1. Biomedical equipment maintenance management checklist.
2. HSI checklist.
3. Joint Commission Comprehensive Accreditation Manual for Hospitals (CAMH).
4. AAAHC.

Management assistance visits

The MERC chief or superintendent used the checklists on the Clinical Engineering website to review and evaluate the management of the organizational maintenance and facility management programs by conducting a management assistance visit (MAV):

1. Maintenance management procedures, documentation and metrics.
2. Preventive maintenance/calibration program and general condition of in-use equipment.

3. The equipment electrical safety and user-training program.
4. Repair parts inventory management, including inventory accuracy and the actual dollar value of the repair parts inventory.
5. Contract maintenance files to see whether each contract is necessary and adequate, considering the skills and training of assigned maintenance personnel. Reviews all provisions of equipment maintenance contracts.
6. The adequacy of current maintenance personnel by rank and skill levels, shop facilities, and test equipment.
7. Individual competency folders, the sections master training plan, technical training requirements, and status of the Readiness Skills Verification Program.
8. Status of the Quality Assurance program. Verifies each activity is using the ECRI on-line membership service for access to all equipment alerts.
9. Major equipment acquisitions, installations, maintenance management plans, and current installation problems or delays.
10. The adequacy and compliance of EOC plans, which address safety, security, fire prevention, medical equipment, utility systems, emergency management, and hazardous materials and waste.

Written results of this evaluation are forwarded electronically to the supported activity, its MAJCOM functional manager, Clinical Engineering Branch and AFMSA/SGSF indicating the findings and recommended actions.

You need to review the MERC MAV trip reports and take appropriate actions as required, and respond in writing to items identified in the reports as requiring local action. Use item nomenclature, index number, manufacturer, discrepancy, and corrective action as applicable. Send the response to the MERC within 45 days of receiving the MAV report. Send a copy of this response to your MAJCOM functional manager and the Clinical Engineering Branch. MAV reports must be maintained on file for two years.

Health Services Inspection (HSI)

HSIs assess the ability of Air Force medical units to fulfill their peacetime and wartime missions. They are conducted by the Directorate of Medical Inspection under authority of the Air Force Inspector General and operate from the Air Force Inspection Agency (AFIA), Kirtland AFB, New Mexico (NM). The HSI is conducted using criteria it has developed and coordinated with the AF/SG using existing regulations and policies. HSI does *not* set policies or develop standards. At the conclusion of the inspection, a report of findings is given to the unit commander. Individual sections are responsible for developing and implementing corrective actions for any deficiencies noted on the HSI findings. The criteria for the inspection is in the form of a checklist commonly know as the HSI checklist. This is the same checklist that you can use in your unit's self-inspection program. If you use the HSI checklist and meet the standards during your self-inspection, then you should do well on the HSI. This is just one indicator of the importance of a good self-inspection program.

The HSI Guide is divided into four categories, which are groupings of related functions. The categories cover major assessment areas of the medical unit and align the HSI process with Department of Defense Directives (DODD), Department of Defense Instructions (DODI), Air Force Policy Directives (AFPD), AFIs, and MAJCOM/local policy guidance. The major categories of the HSI Guide and the two-letter identifiers for each are:

Category 1: Expeditionary Medical Operations (EX.1).

Category 2: In-Garrison Medical Operations (IG.2).

Category 3: Leadership (LD.3).

Category 4: Special Missions (SM.4).

Our "piece of the pie"

The HSI doesn't have much direct effect on the BMET shop. The only area of the BMET world that they will directly look at is the OJT/upgrade training (UGT) program, to include CDC management. They usually get the master training plans (MTP) and a sampling of the 6-part folders from the entire MTF, and go over them with a fine-toothed comb. The following category elements are directly from the 2008 HSI checklist and apply to the BMET shop. This is the criteria that the inspectors use to evaluate your training program to include the Readiness Skills Verification Program (RSVP).

Element LD.3.3.2 On-The-Job Training (OJT) Program - Supervisory Responsibilities

The evaluation criteria follows:

- Supervisors developed a Master Training Plan (MTP) for each work center that included:
  - -- Master Task Listing (MTL) that identifies all day-to-day mission (duty position) requirements, core tasks, in-garrison and contingency tasks, and additional duties performed by work center personnel.
  - -- Current CFETP or AFJQS.
  - -- Locally developed AF Form 797, Job Qualification Standard (JQS) Continuation Sheet (if applicable).
  - -- Milestones for tasks and CDC completion.
  - -- Applied the instructional system development (ISD) process to the development of MTPs.
- Supervisors attended quarterly training meetings conducted by the Unit Training Manager.
- Supervisors maintained six-part training folders (or electronic Air Force Training Record) for required personnel.
- Six-part training folders were properly configured.
- Supervisors document training progress on AF Form 623a, including: CDC and task progression, task certification and recertification, trainee strengths, weaknesses, attitude and corrective action (if required).
- Supervisors conducted and documented on AF Form 623a the work center orientation within 60 days of assignment (120 days for ARC).
- Supervisors conducted and documented on AF Form 623a an initial evaluation of knowledge and skills within 60 days of assignment (120 days for ARC).
- Certifiers and trainers completed the Air Force Training Course.
- Certifiers provided third-party certification and evaluation on tasks identified by the AFCFM (if applicable for the AFSC).
- Transcription to a new CFETP was properly accomplished and documented on the AF Form 623a.
- Supervisors established a CDC completion schedule, adhered to the 30 day timeline (60 day for ARC) for completion of CDC volumes, and monitored trainee progress.
- Unit review exercises (URE) were completed as an "open book" teaching device. Field scoring sheets were scored and review training on missed questions was accomplished and documented.

- Supervisor conducts and documents a comprehensive review of the entire CDC with the trainee prior to ordering the end-of-course examination.
- Supervisor conducted and documented review training of missed questions on the course examination (CE), signed and placed the CE score sheet in the training record until upgrade/qualification training was completed.
- Following a first-time CE failure, the supervisor conducted and documented supervised study sessions with the trainee.
- Supervisor initiated upgrade action when trainee completed all upgrade training requirements.

Element EX.1.4.5 Air Force Specialty Code (AFSC) Specific Training

The evaluation criteria follows:

- The commander appointed in writing, an AFSC functional manager for each assigned AFSC.
- The appointed managers carried out their responsibilities as identified in AFI 41-106.
-- AFSC functional managers conducted a gap analysis.
-- AFSC functional managers created an annual training plan for completion of all tasks identified on the Readiness Skills Verification (RSV) skills checklist.
-- The functional training manager documented all AFSC specific RSV training in the Medical Readiness Decision Support System (MRDSS).
-- The functional training manager provided a report of RSV training status and limitations from the MRDSS to the Medical Readiness Staff Function at least quarterly.
- All AFSCs (officer and enlisted) identified or subject to deploy were trained to the AFSC appropriate to their unit type code assignment.
- A mechanism was in place to train personnel who were absent or excused from scheduled training (make-up training policy letter signed by MTF/CC).
- MTFs forwarded RSV training issues to MAJCOMs using established medical readiness staff function protocols.

Score rating sample scoring guidelines

The items within each element are evaluated and the entire element will receive an overall numerical score described below:

RATING	**DESCRIPTION**
4: Meets Criteria	Programs are efficiently managed and comply with applicable directives.
3: Minor Discrepancy	Minor program deficiencies exist but are unlikely to compromise mission accomplishment.
2: Major Discrepancy	Does not meet some mission requirements. Programs are not effectively managed. Major program deficiencies exist that may significantly impede or limit mission accomplishment.
1: Critical Discrepancy	Does not meet minimum mission requirements. Programs are not adequately managed. Critical program deficiencies exist that may preclude or seriously limit mission accomplishment.
0: Programmatic Failure	Does not comply with standards. Programs do not meet the minimum provisions of the element. Adverse mission impact had occurred or was highly likely to occur.

Rating

When everything is said and done, they add up all the scores and your MTF will get an overall percentage and rating.

PERCENTAGE and RATING	DESCRIPTION
93 – 100 % Outstanding	Indicates performance or operation far exceeding mission requirements. Procedures and activities are carried out in a far superior manner. Resources and programs are very efficiently managed and are of exceptional merit. Minimal deficiencies exist and there were no area scores below Satisfactory..
88 – 92 % Excellent	Indicates performance or operation exceeds mission requirements. Procedures and activities are carried out in a superior manner. Resources and programs are very efficiently managed and relatively free of deficiencies.
80 – 87 % Satisfactory	Indicates performance or operation meeting mission requirements. Procedures and activities are carried out in an effective and competent manner. Resources and programs are efficiently managed. Minor deficiencies may exist but do not impede or limit mission accomplishment.
70 – 79 % Marginal	Indicates performance or operation does not meeting some mission requirements. Procedures and activities are not carried out in an efficient manner. Resources and programs are not efficiently managed. Major or critical deficiencies exist that impede or limit mission accomplishment.
< 70 % Unsatisfactory	Indicates performance or operation does not meet mission requirements. Procedures and activities are not carried out in an adequate manner. Resources and programs are not adequately managed. Significant critical or programmatic failure deficiencies exist that preclude or seriously limit mission accomplishment.

Outstanding Performer Program

The Outstanding Performer Program requires the unit commander and HSI team involvement in the selection process. Unit commanders may nominate *no more* than three military or civilian individuals (no teams) for the inspection team to assess during the course of the inspection. Nomination packages will consist of *no more* than 10 typed lines in bullet format, delineating mission accomplishments that make the person an Outstanding Performer. Accomplishments must have a direct bearing on the programs/processes evaluated during the HSI. Nomination packages must be included with the HSI team chief documents. HSI inspectors will review nominations and assess nominees based on HSI inspection results. The team chief will name the selected Outstanding Performer(s) during the HSI exit conference. BMETs are very seldom, if ever, selected for this award because we don't have much direct involvement with the HSI.

As with any inspection, it is very important to research the most current requirements and checklists. They can change from year to year. The HSI website can be found here:

- https://www-4afia.kirtland.af.mil/Medical-Operations/SG-index.htm.

209. Civilian inspections

There are two civilian agencies that perform accreditation inspections on Air Force MTFs. Joint Commission is used to give accreditation to hospitals and medical groups while AAAHC is used for ambulatory clinics. Each MTF will be inspected by Joint Commission *or* AAAHC, never both.

Joint Commission (formerly JCAHO)

Most hospitals and medical centers in the United States, including those in the military, seek to meet accreditation standards developed by Joint Commission, which is a private, non-profit organization and is the leading accrediting body for hospitals and other medical facilities. They accredit more than

15,000 health care organizations. They publish standards in the *Comprehensive Accreditation Manual for Hospitals (CAMH).* You can find the current edition in your MTF's Performance Improvement/Regulatory Compliance office.The Joint Commission website can be found here:

- http://www.jointcommission.org/

The Joint Commission accreditation process

Joint Commission accreditation involves an on-site survey by a team of physicians, nurses, and hospital administrators. The survey team uses standards in the *CAMH* to evaluate the performance of a hospital or medical group.

Types of surveys

There are three main types of Joint Commission surveys: Continuing Accreditation, Unscheduled and Unannounced For-Cause Survey, and Random Unannounced Survey

Continuing accreditation

Joint Commission surveys are conducted *unannounced* in the window of 19 – 39 months from the last survey. Due to our unique mission and security requirements, Joint Commission does give all DOD a 5-day notice. A small team of professionals performs the survey, which lasts for several days. The MTF pays for this survey.

Unscheduled and Unannounced For-Cause Survey

This is done for on a case-by-case basis where there are suspected potentially serious problems with standards compliance, patient care, or safety issues. The MTF must pay for this survey no matter the outcome.

Random Unannounced Survey

This survey is just what the name implies, a random spot-check and is conducted in the window of 9 - 30 months from the date of the last accreditation. This survey takes one day and is conducted by one person. The MTF is not charged for this survey.

Decisions

Joint Commission accreditation decision categories are:

1. Accreditation.
2. Provisional Accreditation.
3. Conditional Accreditation.
4. Preliminary Denial of Accreditation.
5. Denial of Accreditation.
6. Preliminary Accreditation.

Environment of Care

Our "piece of the Joint Commission pie" falls under the EOC. The "environment" is composed of three basic areas; buildings, equipment, and staffing (or the people). Joint Commission requires *written* management plans that cover seven programs within the EOC.

1. Safety.
2. Security.
3. Hazardous materials and waste.
4. Emergency management.
5. Fire safety.
6. Medical equipment.
7. Utilities.

The only plan that you (as a BMET) are responsible for is the medical equipment plan. The other plans are normally facility management's responsibility. However, if you are lucky enough to be in

charge of the MTF safety program, then the safety and possibly fire safety plans would be your responsibility too. Those are local decisions made by your local leadership.

Medical Equipment Management Plan

The medical equipment management plan is the Joint Commission requirement that you are responsible for that outlines how your MTF manages the entire medical equipment process from cradle to grave. The items that must be included when developing this plan are processes used for:

1. Selecting and procuring equipment.
2. Methods used to determine what medical devices are in the inventory.
3. Inspecting, testing, and maintenance strategies and intervals.
4. Hazard notice/recall procedures.
5. Medical equipment-related incident reporting and investigation procedures.
6. Emergency procedures for equipment malfunctions/failures.
7. An annual evaluation of the effectiveness of the biomedical equipment maintenance program.

Documentation requirements

In addition to the medical equipment management plan, the Joint Commission also evaluates the following specific documentation requirements:

1. Equipment inventory.
2. Initial inspections.
3. Inspection and maintenance of life support equipment.
4. Inspection and maintenance of non-life support equipment.
5. Testing of all sterilizers.
6. Testing of water used for renal dialysis.

Consult the current *CAMH*, section EC.6.10 and EC.6.20 for the specific requirements. You should also review your plan and the *CAMH* on an annual basis to ensure you are covering the current requirements.

Other areas of the Joint Commission survey that is not specifically in your medical equipment management plan, but you are still responsible for are:

1. Competency Assessment - HR.3.10 (Training Program/6-part folders).
2. Monitors Conditions - EC.9.10 (here's your metrics again!).
    - Equipment problems.
    - Equipment failures.
    - User errors.
3. Analyzes issues and develops recommendations - EC.9.20 (Environment of Care Committee).
4. Improves the environment EC.9.30 (Environment of Care Committee).

The CAMH specifies *what* the requirements are. It is up to you to explain in the management plans *how* you are accomplishing those requirements. There is no specific format for a medical equipment management plan. AFI 41–201 and AFI 41–209 already spell out most of the items, so if you are following the regulations, you're good to go. Your MTF or shop may also have various OIs, which cover how some of these issues will be handled—in these cases the instructions may be referenced rather than rewritten in the plan.

More than likely, your shop already has a management plan in place, so there is no need to reinvent one. If you would like further examples of a medical equipment management plan, you can search the

Internet and find numerous examples from other medical facilities or find an example on the Clinical Engineering website. Once the management plan is complete, it should be filed with other MTF instructions and accessible to MTF personnel.

EOC committee

The senior BMET is a member of the EOC committee. The MTF administrator chairs the committee, which meets every one to two months to discuss various topics within the seven EOC management plans. The committee should already have metrics established for what you brief on. If you are the senior BMET, your responsibility is to provide updated metrics to whomever builds the briefing and to brief the Medical Equipment portion at the meeting.

Accreditation Association for Ambulatory Health Care

Starting in 2006, the Air Force began transitioning all 56 ambulatory MTFs from Joint Commission to AAAHC. AAAHC was founded in 1979 and they accredit more than 3000 health care organizations. A benefit of AAAHC is a simpler less formal (and cheaper) process than Joint Commission. The AAAHC inspection team is made up of two to three doctors, nurses, and administrators and takes two to three days to complete. The accreditation is good for three years with a 6 – 12 month notice for recurring inspections. The AAACH website is:

- http://www.aaahc.org/

Types of surveys

AAAHC has several types of surveys. The ones you will more than likely be involved in are the initial and reaccreditation.

- Consultative surveys.
- Managed Care surveys.
- Early Option Survey Program.
- Initial accreditation surveys.
- Reaccreditation surveys.
- Random surveys.
- Discretionary surveys.

Decisions

There are three levels of accreditation decisions which are explained below.

LEVEL OF ACCREDITATION	EXPLANATION
Accredited	3 years – full accreditation 1 year – some areas need to be addressed and organization needs sufficient time to achieve compliance 6 months – organization is not eligible for 3-year accreditation due to not meeting certain requirements
Deferred Accreditation Decision	Organization does not meet standards, but shows commitment and capability to meet them within six months
Denial or Revocation of Accreditation	Someone is going to lose their job. Can you say “new commander”?

Standards

There are eight *core standards* and 16 *adjunct standards* that AAAHC uses for their inspections. They assess these standards by reviewing documentation, verbal answers to detailed questions, and on-site observations and interviews.

Core standards

The core standards are applied to all organizations.They are as follows:

1. Rights of patients.
2. Governance.
3. Administration.
4. Quality of care provided.
5. Quality management and improvement.
6. Clinical records and health information.
7. Professional improvement (new chapter this year).
8. Facilities and environment.

Adjunct standards

The following adjunct standards are only applied to clinics that have the particular service.

1. Anesthesia services.
2. Surgical and related services.
3. Overnight care and services.
4. Dental services.
5. Emergency services.
6. Immediate/urgent care services.
7. Pharmaceutical services.
8. Pathology and medical laboratory services.
9. Diagnostic imaging services.
10. Radiation oncology treatment services.
11. Employee and occupational health services.
12. Other professional and technical services.
13. Research activities.
14. Managed care organizations.
15. Teaching and publication activities.
16. Health education and wellness.

The BMET's "piece of AAAHC pie" is simple and straight forward. It is under the Facilities and Environment Core Standard: *Equipment is properly maintained and tested*. That's it! It couldn't get much simpler than that, could it? The AAAHC inspector will probably want to talk to the BMETs and ask about the maintenance program. With the use of AFI 41–201 and DMLSS you should more than meet the requirement.

Don't throw away the EOC medical equipment management plan quite yet though! It can still be used to tell the story of how you conduct daily operations. AAAHC does not have specific quality improvement requirements, so that part of the management plans can be deleted.

"Environment of Care (EOC)" is a Joint Commission copyrighted and trademarked term, so the name of the committee/meeting should be changed to "Facilities & Environment" or something similar.

Self-Test Questions

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

208 Military inspections

1. Briefly describe the purpose of a self-inspection.

2. What checklists can you use to ensure your shop is performing satisfactorily?

3. Who performs the MAV and at what four things they look?

4. How long must MAV reports be kept on file?

5. What is the objective of the HSI?

6. Where does the Directorate of Medical Inspection obtain the criteria for the HSI?

7. What areas of the Medical Equipment Repair Program will be assessed during the HSI?

209. Civilian inspections

1. What is the main difference between Joint Commission and AAAHC inspections?

2. What are the three main types of Joint Commission surveys?

3. What are the six Joint Commission decisions?

4. What is the “Environment of Care”?

5. Briefly describe a medical equipment management plan.

6. What specific documentation does Joint Commission evaluate?

7. Where can you find the specific Joint Commission requirements that will affect the BMET shop?

8. What is the senior BMET's responsibility to the EOC committee?

9. What types of AAAHC surveys will you most likely be involved in?

10. How often does AAAHC reaccredit and MTF with full accreditation?

11. How many standards does AAAHC use?

12. Explain what AAAHC inspects specifically about the BMET shop.

Answers to Self-Test Questions

201

1. (1) Category of work: scheduled, and unscheduled. (2) Duty Section**:** teams are established for areas of the MTF by function and/or physical location. (3) Equipment Type: Each team would be responsible for all scheduled and unscheduled work orders for the particular equipment.
2. You establish team names and assign personnel to them in the MA module "*Personnel*" screen.
3. To assign maintenance teams for a batch of equipment, perform an *Equipment Search* and narrow the search as you see fit. Once the search results come up, select multiple rows, then select the "*MA/Team*" button on the right hand tool bar. A box will then appear that will let you select the *Scheduled Team* and *Unscheduled Team.*
4. It can take a lot of time to locate the equipment, get the literature, test equipment, and test set-ups together for a calibration each time. This wastes a lot of time.
5. *Navigate* > *Schedules* > *Summary Workload Forecasting*. From there, you can select a variety of search criteria. To get a view of the "big picture", just hit "search." Once the report appears, select the "*Number of Work Orders*" tab to see how the work orders are distributed for each account over the entire year.
6. Shop manning is reduced during the months that are popular for taking leave. Another month to lighten up would be the month that your MERC team visits.
7. *Navigate* > *Schedules* > *Detailed Workload Forecasting*. From there, you can select Defibrillator nomenclature in the search criteria.
8. I – Inspection, P – Preventive maintenance, C – Calibration, S – Scheduled parts replacement.
9. It should be reviewed several times a year to catch items that have gotten knocked out of cycle.
10. Have a priority system and active status review plan. This is especially important when it comes to equipment that is awaiting parts.

202

1. The standards need to be specific, objective, measurable, and achievable.
2. 100%– life-support equipment, 90% – non life-support equipment.
3. To help you monitor the work order progress throughout the month.
4. You can establish a "goal day" (mission permitting) if the monthly goals are met by a certain day.
5. No matter what the cause, the performance standard enable the negative trend to be identified and ultimately, the problem to be corrected.
6. Per AFI 41–201, you should send out a customer survey at least annually.
7. They help your shop meet mission requirements and improve customer support.
8. They are measurements, taken over a period of time and are accurate, useable, and communicate information about processes within your shop.
9. Meaningful to your shop, customers, and leadership; simple and easy to understand, clearly defined, timely, shows a trend, outcomes drive appropriate action.
10. Any 3 of the following: 1) Scheduled completion (number/percentage), 2) Overall completion (number/percentage), 3) Statused work order (number/percentage), 4) Numbers of total work orders (scheduled/unscheduled), 5) Number of "Workable" work orders (Assigned, Assigned Delay, Parts Issued, Unassigned, Unassigned Delay, or Work in Progress), 6) Number of Awaiting Parts, Return to Contractors, and Canceled Work Orders, 7) Unable to Locate No Defect/Operator Error, 8) Open over 30/60/90.
11. A report is produced on a periodic (monthly/quarterly/annually) and an inquiry is produced "as requested."
12. (1) b,c
    (2) a
    (3) a
    (4) b
    (5) a,d
    (6) b
    (7) c
    (8) d
    (9) b,c
    (10) c
    (11) c
    (12) a
    (13) k
    (14) f,g,h,i
    (15) b
    (16) a

203

1. (1) Annual contract, which provides varying levels of service: full service, preventive maintenance only, parts only, or first-look, for a period of time, usually an entire fiscal year (1 October to 30 September). (2) One-time: Performed using local services IMPAC card and not to exceed $2500 with one-time call (3) Equipment is considered "loaned" if it is provided by the company at no charge when the MTF agrees to purchase consumable supplies. Laboratory equipment is popular for this under a reagent rental agreement. Equipment can be rented/leased if it is a temporary requirement or is more cost effective than purchasing. Normally, maintenance is included in the rental/lease/loan contract. The BMET shop should be involved in this process to review the specifics of the contract. The equipment still needs to be gained in DMLSS as maintenance significant in order to track the maintenance and recall/alert notification. Equipment provided for demonstration or very short term use is also considered "loaned".
2. Full service, preventive maintenance only, parts only, or first-look.

3. Funded AF Form 9 or DD Form 448, Military Interdepartmental Purchase Request (MIPR). Statements of Work. Performance Plan Sole Source Justifications (if required) Urgent and Compelling Need letter (if required).
4. The equipment involved. Whether parts are included. Hours of service. Response time. Performance standards. Frequency of service. Documentation of work performed. Reporting instructions (sign in and out at the BMET shop). Distribution of service reports. Exact specifications and tolerances for calibration actions. MTFs HIPAA Compliance Plan and the ramifications associated with failure to comply.
5. AFI 41–201, *Managing Clinical Engineering Programs* and AFI 41–209, *Medical Logistics Support*, Chapter 4.
6. Explaining why the recommended company is the only company who can perform the service contract requirement.
7. Include (but are not limited to) personal taste, good relationship with existing vendor, or comfort level with a particular vendor.
8. Must identify what serious injury the government will experience if the need is not fulfilled immediately (e.g., physical, financial or other) and contain a required delivery date.
9. Army Medical Department (AMEDD) Medical Maintenance Operations Divisions U.S. Army Medical Materiel Agency, (USAMMA), located in Ft Detrick, MD.
10. Microscopes Optometry equipment (phoropters, lensometers, slit lamps, keratometer, & vision testers) Audiometers Dental Handpieces Imaging Equipment (Orex, Compano, and ACR 2000 CR Readers).
11. X-ray equipment (portable & dental) X-ray tubeheads Test Equipment (various) Imaging Equipment (Orex, Compano, and ACR 2000 CR Readers).
12. Repair parts.
13. If it is provided by the company at no charge when the MTF agrees to purchase consumable supplies or provided for demonstration or very short term use.
14. Monitoring the contractor's performance and ensuring that the contractor meets the terms of the contract. Ensuring that the equipment users understand their roles in relation to the contract. Maintaining documentation of any actions relating to the contract. This includes detailed documentation on contractor performance, especially when problems occur with contractor performance.
15. Federal Acquisition Regulation (FAR).
16. DSCP.
17. A charge of up to 2 percent of the total cost of the order, or a minimum of $175, shall be collected by the VASS for placing orders against existing contracts and for creating new open market contracts. The maximum charge will not exceed $25,000 to award a contract.

204

1. The BMET's pre-deployment, deployment, and post-deployment responsibilities. Procedures for requesting and processing work orders, repair parts, and spare parts. Repair parts inventory management and control procedures for spare parts assigned to the mobility assemblage. Procedures for identifying and controlling technical literature, tools and test equipment assigned to the mobility assemblage.
2. The equipment is identical, it is who and where they are used that differentiates them.
3. AF Clinical Engineering website in library tab under Guidance documents. Ref: https://medlog.detrick.af.mil/mlc/site_apps/clineng/library/index.cfm?action=list&type=5

205

1. OJT, advanced schools at Sheppard AFB, manufacturer's school, or third-party training.
2. Your MTF Training Office or MAJCOM functional manager should ask what your training needs are for the year. You need to make sure your MAJCOM Functional Manager knows what your needs are.
3. Consider: their current skill level, how long they have been assigned, PCS/separation intentions.

206

1. (1) Provides data critical to crisis planning. (2) Provides for the deliberate or peacetime planning process. (3) Used by the Chief of Staff United States Air Force (CSAF) and subordinate commanders in assessing

their effectiveness in meeting Title 10, "United States Code," responsibilities to organize, train, and equip forces for combatant commands.

2. Readiness and logistics at the Air Staff level.
3. Unit identification, mission tasking narrative, mission specifics, and resources to be measured.
4. The assumptions and intent of an operation and is designed to give an overall picture of an operation.
5. Joint Chiefs of Staff (JCS).
6. (1)Type and amount of workload the UTC is capable of performing. (2)Type of base where the UTC may be employed. (3) Other UTCs which are required to support the defined capability.(4) Any other information pertinent to that UTC. The MISCAP is the only part of the UTC that could be classified.
7. (1) b.
   (2) e.
   (3) a.
   (4) e.
   (5) c.
   (6) d.
   (7) a.
   (8) a.
   (9) c.
   (10) b.
   (11) c.
   (12) b.
8. FFABC – USAF AB CLINIC TEAM.
   FFBMM – BIOMED EQUIP MAINT TEAM.
   FFEP2 – EMEDS BASIC.
   FFEP3 –EMEDS +10.
   FFHA4 – CT SCAN TEAM.
   FFVCF –CASF.

207

1. Active Duty, Guard, and Reserve bases CONUS and in Korea.
2. BMETs don't have exposure to the WRM equipment that they used to.
3. MERC calibrations and quality assurance checks as with any other MTF equipment.
4. If you notice any item that is necessary for the operation of the equipment that is NOT on the Allowance Standard such as a patient cable, centrifuge rotor, defibrillator paddles, etc.

208

1. To ensure the function is well managed and to identify and initiate solutions to problems before outside inspections.
2. (1) Biomedical equipment maintenance management checklist. (2) HSI checklist. (3) Joint Commission CAMH. (4) AAAHC.
3. MERC chief or superintendent; any 4 of the following: (1) Maintenance management procedures, documentation and metrics. (2) PM/calibration program and general condition of in-use equipment. (3) The equipment electrical safety and user-training program. (4) Repair parts inventory management, including inventory accuracy and the actual dollar value of the repair parts inventory. (5)Contract maintenance files to see whether each contract is necessary and adequate, considering the skills and training of assigned maintenance personnel. Reviews all provisions of equipment maintenance contracts. (6) The adequacy of current maintenance personnel by rank and skill levels, shop facilities, and test equipment. (7) Individual competency folders, the sections master training plan, technical training requirements, and status of the Readiness Skills Verification Program.(8) Status of the Quality Assurance program. Verifies each activity

is using the ECRI on-line membership service for access to all equipment alerts. (9) Major equipment acquisitions, installations, maintenance management plans, and current installation problems or delays. (10) The adequacy and compliance of Environment of Care plans, which address safety, security, fire prevention, medical equipment, utility systems, emergency management, and hazardous materials and waste.

4. MAV reports must be maintained on file for 2 years.
5. Assess the ability of Air Force medical units to fulfill their peacetime and wartime missions.
6. The HSI is conducted using criteria it has developed and coordinated with the AF/SG using existing regulations and policies such as Department of Defense Directives (DODD), Department of Defense Instructions (DODI), Air Force Policy Directives (AFPD), Air Force Instructions (AFI), and MAJCOM/local policy guidance.
7. The only area of the BMET world that they will directly look at is the OJT/UGT program, to include CDC management.

209

1. Joint Commission is used to give accreditation to hospitals and medical groups while AAAHC is used for ambulatory clinics.
2. Continuing Accreditation, Unscheduled and Unannounced For-Cause Survey, and Random Unannounced Survey.
3. (1) Accreditation; (2) Provisional Accreditation; (3) Conditional Accreditation; (4) Preliminary Denial of Accreditation; (5) Denial of Accreditation; (6) Preliminary Accreditation.
4. Buildings, equipment and staffing.
5. Outlines how your MTF manages the entire medical equipment process from cradle to grave.
6. (1) Equipment inventory. (2) Initial Inspections. (3) Inspection and maintenance of life support equipment. (4) Inspection and maintenance of non-life support equipment. (5) Testing of all sterilizers. (6) Testing of water used for renal dialysis.
7. Current *CAMH*, sections EC.6.10, EC.6.20, HR.3.10, EC.9.10, EC.9.20, and EC.9.30.
8. To provide updated metrics to whomever builds the briefing and to brief the Medical Equipment portion at the meeting.
9. Initial and reaccreditation.
10. 3 years.
11. 11 core standards and 16 adjunct standards.
12. Equipment is properly maintained and tested. That’s it!

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. (201) Which shop organization technique is used primarily in large medical treatment facilities?
   a. Category.
   b. Duty section.
   c. Equipment type.
   d. Scheduled/unscheduled.

2. (201) What are the three shop organization techniques?
   a. Category, duty section, and equipment type.
   b. Category, duty section, scheduled/unscheduled.
   c. Category, equipment type, scheduled/unscheduled.
   d. Duty section, and equipment type, scheduled/unscheduled.

3. (201) How do you align the scheduled workload in the *Detailed Scheduled Workload* screen?
   a. It cannot be done from this screen.
   b. “Grab” the letter (I, P, C, or S) and “drop” it on any month.
   c. “Grab” the letter (I, P, C, or S) and “drop” it on a sooner month.
   d. Double click on the letter (I, P, C, or S), then select the new month from the drop-down.

4. (201) How often should you review the *Detailed Scheduled Workload Report* for equipment that has gotten knocked out of cycle?
   a. Monthly.
   b. Quarterly.
   c. Several times per year.
   d. Once a year.

5. (201) What can you do to help with the unscheduled workload?
   a. Have a dedicated unscheduled work order team.
   b. Only take unscheduled work orders on certain days.
   c. Have a priority system and active status review plan.
   d. Dedicate certain days exclusively to unscheduled work orders.

6. (202) What is the industry standard for scheduled work order completion of life-support equipment?
   a. 90%.
   b. 95%.
   c. 98%.
   d. 100%.

7. (202) What is the industry standard for scheduled work order completion of non life-support equipment?
   a. 90%.
   b. 95%.
   c. 98%.
   d. 100%.

8. (202) What are measurements taken over a period of time and are accurate, useable, and communicate information about processes within your shop?
   a. Metrics.
   b. Graphs.
   c. Databases.
   d. Spreadsheets.

9. (202) Which guideline is *not* a characteristic of a good metric?
   a. Timely.
   b. Created by Microsoft Excel.
   c. Simple and easy to understand.
   d. Outcome drives appropriate action.

10. (202) Which is *not* one of the three formats for the *Work Order Management Summary*?
   a. Team.
   b. Customer.
   c. Technician.
   d. Maintenance Activity.

11. (202) Which reports can be selected by *Maintenance Activity*, *Team*, or *Technician* formats?
   a. *Workload Report* and *MEPRS Report.*
   b. *Productivity Report* and *Work Order Management Summary*.
   c. *Maintenance Management Report* and *Workload Report.*
   d. *Customer Maintenance Report* and *Maintenance Management Report.*

12. (202) Which report shows a twelve-month trend?
   a. Workload Report.
   b. Productivity Report.
   c. Work Order Management Summary.
   d. Maintenance Management Report.

13. (202) What should you do if an item appears on the *Maintenance Interval without a Date Due Report*?
   a. Report the data at the next Environment of Care Committee.
   b. Perform preventive maintenance and a full calibration as soon as possible.
   c. Enter the *Date Due* in the *Maintenance Data* tab of the *Equipment Detail.*
   d. Have MEMO initiate a Report of Survey and drop the item from record.

14. (202) What is used to justify budget, manning, and the overall maintenance program?
   a. Workload Report.
   b. Management Reports.
   c. Last year’s budget proposal.
   d. Medical Equipment Management Plan.

15. (202) Who performs the monthly review of your management reports?
   a. Squadron commander.
   b. MAJCOM functional manager.
   c. Medical Logistics Flight commander.
   d. Medical Treatment Facility commander.

16. (203) What are the three types of service contracts that Biomedical Equipment Maintenance Technician (BMET) use?
    a. Rental/lease/loan.
    b. Annual, full service, first-look.
    c. One-time, full service, first-look.
    d. Annual, one-time, and rental/lease/loan.

17. (203) Where can you find guidance on maintenance contracts?
    a. *Federal Acquisition Regulation* (FAR).
    b. AFI 41–120, *Medical Resource Operations.*
    c. *Code of Federal Regulations*, Volume 21 (21CFR).
    d. AFI 41–201, *Managing Clinical Engineering Programs* and AFI 41–209, *Medical Logistics Support.*

18. (203) What item is an acceptable reason for an Urgent & Compelling Justification?
    a. Poor acquisition planning.
    b. Need to spend expiring funds.
    c. Impending inspection by regulatory agency.
    d. Loss of diagnostic capability due to the only CT being down.

19. (203) What is *not* required for a one-time contract repair that costs $3200?
    a. Performance Plan.
    b. Statements of Work.
    c. IMPAC GPC Request Form.
    d. Funded DD Form 448 or AF Form 9.

20. (203) How do you pay for service provided by an Army Depot?
    a. AF Form 9.
    b. DD Form 448.
    c. IMPAC GPC Card.
    d. Service is provided at no charge to all DOD activities.

21. (203) Which item is repaired by the Tobyhanna Army Depot?
    a. X-ray tubes.
    b. Test equipment.
    c. Dental handpieces.
    d. Flex and rigid scopes.

22. (203) Which items are repaired by the Tracy Army Depot?
    a. Flex and rigid scopes.
    b. Optometry equipment.
    c. Test equipment and x-ray tubes.
    d. Dental operatory units and handpieces.

23. (203) Which Army Depot provides repair parts?
    a. Tracy, CA.
    b. Hill AFB, UT.
    c. Ft Detrick, MD.
    d. Tobyhanna, PA.

24. (203) Where can you find the *Statement of Understanding* which is used for demonstration equipment that is provided at no cost to the government?
    a. AFI 41–201.
    b. AFI 41–209.
    c. Federal Acquisition Regulation (FAR).
    d. Base legal office.

25. (203) Who monitors the contractor's performance and ensuring that the contractor meets the terms of the contract?
    a. Senior BMET.
    b. Contracting Officer.
    c. Quality Assurance Evaluator (QAE).
    d. Section NCOIC where the service is provided.

26. (203) Which contracting agency procures all medical investment equipment such as imaging systems?
    a. Base Contracting.
    b. Defense Logistics Agency (DLA).
    c. Veterans Affairs Special Services (VASS).
    d. Defense Supply Center Philadelphia (DSCP).

27. (203) How much is the Veterans Affairs Special Services (VASS) surcharge?
    a. Up to 2% of the contract, minimum of $175, maximum of $25,000.
    b. Up to 2% of the contract, minimum of $200, maximum of $20,000.
    c. Up to 2.5% of the contract, minimum of $250, maximum of $25,000.
    d. Up to 1.75% of the contract, minimum of $175, maximum of $17,500.

28. (204) What is *not* required to be included in the War Reserve Materiel (WRM) Maintenance Operating Instruction (MOI)?
    a. BMET's pre-deployment, deployment, and post-deployment responsibilities.
    b. Procedures for requesting and processing work orders, repair parts, and spare parts.
    c. Memorandum of Understanding (MOU) for maintenance on generators, ECUs, and radios.
    d. Procedures for identifying and controlling technical literature, tools and test equipment assigned to the mobility assemblage.

29. (204) What Defense Medical Logistics Standard Support (DMLSS) nomenclature is used for a public access defibrillator (PAD)?
    a. Public Access Defibrillator.
    b. Automatic External Defibrillator.
    c. Defibrillator, Public Access.
    d. Defibrillator, External, Automated.

30. (205) How do you justify funding for a manufacture's school?
    a. Each base is allotted 2 manufacture training classes each year.
    b. Compare the cost of the manufacturer training to the training at Sheppard AFB.
    c. Predict the cost of obtaining the patient care downtown if the equipment should fail.
    d. Compare what it would cost for a full service contract to the total cost to attend the training.

31. (206) What is the purpose of the Medical Resource Letter (MRL)?
    a. Enables combatant commanders to know what medical resources are available.
    b. Provides a complete listing of all medical personnel, equipment and supplies available.
    c. Provides for strategic planning in the maintenance and movement of medical war reserve assets.
    d. Document capability of medical war-time assets to the AF Surgeon General and Secretary of Defense.

32. (206) What provides the basis for the Designed Operational Capabilities (DOC) statement?
    a. Unit Type Code (UTC).
    b. Medical Resource Letter (MRL).
    c. Concept of Operations (CONOPS).
    d. Mission Capability Statement (MISCAP).

33. (206) Which is prepared by the major command (MAJCOM) and specifically summarizes what the facility is tasked to do during wartime as outlined in operations plans and other directives?
    a. Medical Resource Letter (MRL).
    b. Concept of Operations (CONOPS).
    c. Mission Capability Statement (MISCAP).
    d. Designed Operational Capabilities (DOC) statement.

34. (206) Which details, in broad outline form, the assumptions and intent of an operation and is designed to give an overall picture of an operation?
    a. Medical Resource Letter (MRL).
    b. Concept of Operations (CONOPS).
    c. Mission Capability Statement (MISCAP).
    d. Designed Operational Capabilities (DOC) statement.

35. (206) What is a 5-character alphanumeric code controlled by the Joint Chiefs of Staff (JCS)?
    a. Device code.
    b. Unit type code (UTC).
    c. Air Force specialty code (AFSC).
    d. Status of Resources and Training (SORTS) code.

36. (206) Which unit type code (UTC) does *not* have a Biomedical Equipment Maintenance Technician (BMET) assigned?
    a. FFEP2 – EMEDS Basic.
    b. FFEP3 – EMEDS +10.
    c. FFEP4 – EMEDS +25.
    d. FFBMM – Biomedical Equipment Maintenance Team.

37. (207) What bases have the In-Garrison Maintenance Contract for war reserve materiel (WRM) equipment?
    a. CONUS bases only.
    b. Overseas bases only.
    c. All bases worldwide.
    d. CONUS Active Duty, Guard, and Reserve bases and Korea.

38. (208) What are the key elements inspected during a self-inspection?
    a. Mission, resources, training, and personnel.
    b. Work order completion, patient safety.
    c. Mission, resources, training, and work order completion.
    d. Work order completion, money, training, and personnel.

39. (208) Which is *not* an existing checklist that you can use to develop a self-inspection checklist?
    a. HSI checklist.
    b. Initial Inspection checklist.
    c. Joint Commission CAMH.
    d. Biomedical equipment maintenance management checklist.

40. (208) Who performs a management assistance visit (MAV)?
    a. Senior BMET.
    b. MERC chief or superintendent.
    c. MAJCOM functional manager.
    d. 4A2X1 AF career field manager.

41. (208) What inspection is used to evaluate the management of the organizational maintenance and facility management programs?
    a. Joint Commission.
    b. Staff assistance visit (SAV).
    c. Health Services inspection (HSI).
    d. Management assistance Visit (MAV).

42. (208) How long must you keep the management assistance visit (MAV) trip report on file?
    a. 45 days.
    b. 1 year.
    c. 2 years.
    d. Indefinitely.

43. (208) Which inspection assesses the ability of Air Force medical units to fulfill their peacetime and wartime missions?
    a. Joint Commission.
    b. Staff assistance visit (SAV).
    c. Health Services inspection (HSI).
    d. Management assistance visit (MAV).

44. (208) What specific areas of a biomedical equipment repair program does the Health Services inspection (HSI) evaluate?
    a. Training program.
    b. Overall work order completion.
    c. Scheduled work order completion.
    d. Medical equipment management.

Please read the unit menu for unit 2 and continue ➔

Student Notes

Unit 2. Equipment Accountability, Acquisition, and Quality Assurance

2–1. Medical Equipment Management

Because the management of medical equipment covers so much material, we have dedicated an entire section of this unit to the subject. Obviously, as a biomedical equipment maintenance technician (BMET) you will be heavily involved with the program and you need to be familiar with several different aspects. The goal of the medical equipment management program is to optimize the safety, effectiveness, efficiency, and economy of diagnostic, therapeutic, and support equipment used for patient care. Medical equipment maintenance has definite responsibilities in support of this goal throughout the life of each item of medical equipment, from acquiring to disposing of the equipment. In this section we will outline your responsibilities and provide guidance on managing the life of an equipment item.

The overall program objectives are as follows:

- Standardize the management of equipment in use at Air Force medical treatment facilities (MTF).
- Maintain equipment in-use and authorization records.
- Keep the medical logistics flight commander (MLFC) informed through comprehensive and accurate reporting.
- Promote economy, supply discipline and effective equipment management in support of the overall medical mission.
- Ensure medical equipment meets accepted safety and professional standards.
- Ensure investment equipment reporting meets established accounting standards.

210. Accountability and inventory

The Medical Equipment Management Office, called MEMO is the section of medical logistics that is responsible for all of the medical equipment in your MTF. As a BMET, you will work hand in hand with the folks in MEMO on a very regular basis, so it is important that you be familiar with their function and maintain a good working relationship.

Responsibilities

There are numerous players in the medical equipment management program from the Air Force Surgeon General all the way down to each person in the MTF. The key players are listed below with their responsibilities.

AF surgeon general

The surgeon general maintains the *overall* program responsibility for the medical equipment management program. Other responsibilities include the following:

- Approval of equipment allowance changes that affect medical organizations.
- Approval of medical equipment allowances and allowance changes for nonmedical organizations.
- Functional review of command medical investment equipment programs to ensure planning reflects the latest accepted technology, professional standards, safety, and mission requirements.

Clinical Engineering branch

Being the hub of the medical equipment program, the Clinical Engineering branch centrally manages investment equipment funding, execution, and budget requirements. Other responsibilities include the following:

- Evaluate and manage the AF surgeon general level approval/disapproval process to include funding and approval status reporting to the major command (MAJCOM) command MEMO (CMEMO).
- Maintain records of all MAJCOM investment equipment requests.
- Centrally manage investment equipment asset and depreciation reporting.

MAJCOM surgeon general

The surgeon general of each MAJCOM oversees the medical equipment management program for all bases within their command. Specific responsibilities follow:

- Establish a command medical Equipment Review and Authorization Activity (ERAA).
- MAJCOM surgeons may assume the command ERAA responsibilities or delegate them to the command administrator, command medical logistics officer or CMEMO.
- Establish a CMEMO.

Command Medical ERAAs

Medical ERAAs at the command level validates equipment requests with a unit cost of over $100,000 for need, manpower, and operations and maintenance (O&M) cost concerns. When approval exceeds the authority of the MTF commander, the MAJCOM ERAA recommends approval or disapproval on AF Form 601, Equipment Action Request. Finally, they prioritize the MAJCOMs approved/unfunded investment equipment requirements.

Command MEMO

The CMEMO administers and monitors the command medical equipment management program for their MAJCOM. Other responsibilities include the following:

- Give medical service support vehicle redistribution recommendations to the command.
- Monitor funds allocation and procurement action to ensure command ERAA priorities and Clinical Engineering branch guidance are followed.
- Assign a CMEMO document number to each AF Form 601 sent to Clinical Engineering branch for approval/funding.

- Forward an electronic copy via email of the command approved AF Form 601 package on investment items to Clinical Engineering branch.
- Return the approved/disapproved AF Form 601 package, with Clinical Engineering branch and command comments, to the originator.
- Keep a suspense copy of all approved unfunded command investment equipment requirements.
- The command ERAA will use these copies to develop the command investment equipment acquisition priority list.
- Send Clinical Engineering branch a prioritized list of all approved unfunded investment equipment requests, as of 1 October each year, to arrive no later than (NLT) 20 October.

MTF commander

The MTF commander has the overall responsibility for medical equipment management program at their MTF. Other specific responsibilities are listed below:

- Appoint a qualified 7-level TSgt (or higher), or GS–7 civilian (or higher), as responsible MEMO officer for the MTF *(This could be a BMET).* Accounts with no one assigned who meets the grade criteria need to apply for a waiver through their MAJCOM to Air Force Medical Operations Agency (AFMOA)/SGSL for approval.
- Appoint, in writing, property custodians to support medical logistics in the requisition, management, accountability and maintenance of equipment in the using activities. The responsibility can be delegated to medical squadron commanders. A custodian may be appointed for more than one using activity, and it is highly recommended that an alternate custodian be appointed for each activity to ensure accountability when the primary is absent from the MTF.
- Approve/disapprove equipment requests submitted by the MEMO and reviewed by the base medical ERAA. The approval/disapproval decision will be annotated on the equipment request (AF Form 601 or DMLSS equipment request) and signed by the MTF commander or authorized review authority.
- The equipment request is the source authorization document. Signed ERAA minutes can be used in lieu of signed equipment requests. Each approved AF Form 601 must cite the date the minutes were approved and a copy of the minutes must be maintained in MEMO. No other alternative is authorized.
- Within the MTF, the DMLSS equipment request will be used in lieu of the AF Form 601. However, requests leaving the MTF for higher level (MAJCOM, AF/SGRMAE) review/ approval must include a completed AF Form 601.
- Establish an equipment review process. Responsibility for the ERAA can be delegated (in writing) to the deputy commander or MTF administrator. If the ERAA responsibility is delegated, that official will be authorized to approve or disapprove all equipment requests reviewed by the ERAA.
- Appoints disinterested Report of Survey investigating officers as required.

Medical ERAA board

This medical ERAA board is the one at your MTF. The senior BMET should be a member of this board. The board recommends approval or disapproval of equipment requests submitted by MEMO for equipment within prescribed allowances. Other specific responsibilities include the following:

- Prioritize all approved unfunded investment and expense equipment requests provided by MEMO.

- Review equipment requests submitted by base medical activities for quantities of medical items that exceed allowances or for which no allowance exists.
- Act as the approval authority for equipment requests from medical units that do not have an MTF commander assigned with the exception of Air Force Special Operations Command (AFSOC) units which will submit equipment requests to the AFSOC/SG for review/approval.
- Approving or disapproving medical equipment requests from nonmedical organizations.

MEMO officer

The MEMO officer is normally a Medical Logistics position, but at small clinic, it could be filled by a BMET (perhaps you). The MEMO officer manages the MTF medical equipment management program in accordance with (IAW) guidance outlined in 41–209.Other specific responsibilities are listed below:

- Maintain prescribed authorization and in-use equipment records. As the responsible office, the MEMO will be responsible for maintaining files for all detached facilities supported by the host MEMO.
- Order equipment using the guidance in Air Force Instruction (AFI) 41–209 and any local and/or MAJCOM guidance. Ensure appropriate technical recommendations from biomedical equipment maintenance, the facility manager and information systems (when applicable), are incorporated into the equipment requirement.
- Train account custodians on equipment management procedures and assist in the preparation of equipment requests.
- Ensure MEMO inventories are performed**.**

Equipment (property) custodian

A property custodian is any person designated by the organization commander or chief of staff agency to have custodial responsibility for government property in their possession. Their responsibilities include the following:

- Planning and forecasting requirements to meet mission goals.
- Preparing and forwarding materiel requests to the proper agency or individuals.
- Signing custody receipts or listings for property charged to their organization.
- Reporting losses or irregularities relating to property to immediate commanders, accountable officers, and/or responsible officers.
- Taking action to reconcile and correct property records.
- Reporting unusual purchase patterns to commanders.

Equipment custodians may incur pecuniary liability for the loss, destruction, or damage to property caused by willful misconduct, deliberate unauthorized use, or negligence in the use, care, custody, or safeguard of the property from causes other than normal wear and tear. Provide evidence of responsibility for management of government property at designated levels of command by:

- Properly documented and itemized physical inventories taken at required intervals.
- Maintaining a copy of each document or computer record that confirms acquisition or movement of property.
- Maintaining certificates of transfer between responsible/accountable personnel.

Accountability

After an equipment item is deemed acceptable, MEMO processes the item in DMLSS. The system assigns an equipment control number (ECN) to the item, a tag reflecting the ECN is attached to the equipment, and its accountability begins.

Property custodian accountability

The primary person responsible for equipment accountability is the property custodian for the section that will use the equipment. When the section takes possession of the equipment the property custodian must sign for it. At this point the property custodian is now responsible for the equipment. That custodian retains equipment accountability until an AF Form 601 is processed through the MEMO to transfer the equipment to another property custodian or turn the item in to the MEMO. In this case, the property custodian is accountable until he or she receives a signed copy of the AF Form 601 back from the MEMO. While the equipment custodian is responsible for the accountability of an equipment item, your shop takes on a level of accountability when an item comes in for repairs.

All AF personnel

The Air Force's mission makes it imperative that all military and civilian personnel operate and maintain government systems, equipment, supplies, and real property in the best possible condition, in constant readiness, and in the absolute minimum quantities necessary to accomplish assigned tasks.

The Air Force provides, through property managers, proper allocation, control, use, and safeguarding of property under Air Force control. Property management tenets apply to each individual. Property management responsibilities limit the use of government property to official purposes only.

Supply discipline is mandatory and essential to conserve, protect, and maintain available government systems, equipment, supplies, and real property for operational requirements. Subordinate commanders are responsible to their commanders for prudent management, control, storage, and cost-effective use of government property under their jurisdiction. Government property includes, but is not limited to, hand tools, operating stocks, individual equipment, administrative supplies and equipment, and bench stock items.

Property management responsibility includes pecuniary liability for the loss, damage, or destruction of property resulting from negligence, willful misconduct or deliberate unauthorized use.

Inventory

To assure proper accountability, inventories are performed at least annually. There are two types of inventories that you will be responsible for: bench stock and equipment.

Bench stock

An annual physical bench stock inventory of all repair parts is required by AFI 41–201 to be conducted before 30 April each year. To conduct the inventory, you compare the DMLSS Physical Inventory list to the actual inventory on the shelves. In order to request the Physical Inventory list you must be following the guidance in AFI 41–201 and Air Force Manual (AFMAN) 41–216 on managing repair parts. If the level type and other codes are not correct, the items will not show up on the Physical Inventory list. In a perfect world, the inventory would be 100% accurate and there would not be any gains or losses. However here in the real world, that is seldom the case.

Once the physical count is completed and all overages and shortages have been identified, the next step is to try to account for each of these. Overages are easy to deal with by simply gaining them or adjusting the balance. Losses, however, must be explained. More than likely the parts were used to repair a piece of equipment and but just didn't get issued to that equipment. The easiest way is to research what equipment the "missing" parts were used (or could have been used) on. After you have identified a particular piece of equipment, simply open a work order and issue that part to it. This is especially important on the high-dollar parts. If the parts only cost a few dollars, it is not really worth the time and effort to do all that research. It is easier to just "write them off" and do a loss. The bench stock inventory looks better if you can show an overall gain and not a loss.

Adjust the final repair parts balances by processing the Physical Inventory will adjust repair part balances by processing repair part gains (RPG) and repair part loss (RPL) transactions in the

background. The BMET is prompted to choose whether these adjustments will be used to capture demands.

Bench stock inventory letter

After the bean counting and number crunching are complete, it is time to put it all in writing and submit it to your MLFC for his or her approval signature. The letter should contain the following:

1. Overall accuracy in line items.
2. Total dollar amount.
3. Value of all overages.
4. Value of all shortages.
5. Recommended corrective actions
6. Annotated Physical Inventory print out (as attachment)

Sample letter

This is a sample of a bench stock inventory letter. There is not a specific format for the letter, but it should be on AF letterhead with the proper MEMORANDUM FOR, FROM, and SUBJECT headings and signature blocks. As always, see the *Tongue & Quill* for all your writing needs.

MEMORANDUM FOR: *Your MLFC*

FROM: *Your office*

SUBJECT: Annual Bench Stock Inventory

1. The attached inventory for Medical Equipment Repair (MER) bench stock is submitted for your review. Per AFI 41–201, Chapter 2, the inventory will be conducted by 30 April each year. This year, the physical inventory was conducted in February 2005 on 322 line items with a dollar value of $64,759.98. There were 14 line items with inaccurate balances, which gave an overall accuracy of 96%. Every item was counted, labeled, and balances were verified against the master inventory. Adjustments to the master inventory were made as required. There were no trends noted, therefore corrective actions are not necessary.

2. The following is a combined list of gains and losses for the MER bench stock.

Spare Parts Gains = $772.15

Spare Parts Loss = $232.35

Total Gain = $539.80

3. If there are any questions, please direct them to me at DSN 123–4567.

Your signature block

1st Ind., XX MDSS/SGSL

Approve/Disapprove

MLFC signature block

Attachment:

Physical Inventory Document

Equipment

A physical inventory of MEMO controlled property will be performed within 12 months of the previous inventory. Inventories can be accomplished more often if the MTF commander, MLFC or MEMO deem it necessary. The MAJCOM may waive the inventory requirement up to 180 days when

unforeseen or unavoidable conditions prevent taking an inventory. MAJCOMs will forward a copy of the waiver to AFMOA/SGSL. Waivers longer than 180 days require approval from AFMOA/SGSL.

MEMO will establish an inventory schedule and may direct that property custodians or designated inventory teams perform the inventories. BMETs could be part of the inventory team. MEMO will provide each property custodian or inventory team with an equipment listing. Every item on the list must be verified. Once complete, the custodian signs the listing and returns it to MEMO.

211. Evaluating requests

The 5-level CDCs went into detail about the evaluation process, which can be performed by any technician depending on experience level and complexity of the request. As a 7-level and possibly the senior BMET, it is ultimately your responsibility to take a final look at each request to ensure all angles have been looked at. Some items such as a simple suction pump is just “plug and play” do not require much of a review and can be more or less *pencil whipped*. Other equipment takes extensive research and legwork to fully evaluate. This is where experience comes in to make those determinations.

The current form for the technical evaluation is found in AFI 41–209, *Medical Logistics Support,* as Attachment 25. The old dogs may still called this form a “B–5” because that was the attachment number in the old regulation. The form is *required* for investment/capital equipment. However, many organizations complete it for all equipment items (*medical and non-medical*) to ensure that a BMET reviews all equipment purchases. This will keep items from slipping through without the BMET’s knowledge. Be sure you have covered all appropriate areas; this information has a direct impact on the installation process that we discuss in the next lesson.

DMLSS has something very similar to the Attachment 25 in the EM > REQUEST screens. Some sites might be using this instead of the Attachment 25. If they are, you will get training on the local procedures from MEMO personnel.

It is important to be as thorough, accurate, and professional as possible during your review, *especially* on investment equipment. Putting an equipment description for a 4D Ultrasound Unit such as “Takes cool pictures of babies in the womb” would not be appropriate (even if it is true) because each procurement package is thoroughly reviewed at all levels from your MTF to MAJCOM to the Air Force Medical Logistics Office (AFMLO). Who knows, the surgeon general may even look at them.

Network security

The purpose of this part of the lesson is to develop an understanding of the process involved to gain permission to plug a piece of equipment into the Air Force computer network. You will not be expected to be an expert at network security, but if you at least have a good understanding of the process, you can help guide the manufactures and users through it so your MTF can use what it paid for.

More and more equipment items require access to the hospital computer network. Some equipment has certain features that require this access while others need access to operate at all. Network security requirements can hold up equipment installation more than anything else. Due to network security issues not being addressed there have been numerous equipment items show up and not be able to be used, sometimes for a year or more. The Systems Information Assurance/Network Security personnel need to be involved in the procurement process early in the game.

Adding new systems (hardware and/or software), network components, or communications equipment to an operational network poses a risk to that network. The risk ranges from inconsequential to catastrophic disruption of network operation. There is also a risk that the component or system will not function as expected. Minimizing these risks is paramount in today’s complex networks. The most effective way to reduce these risks is to institute processes that

guarantee that the new component or system is ready to be fielded. We'll cover a few terms, then go over the process involved to gain the approval to plug into the network.

Terms

The following are common terms associated with network security used by the Information Systems community.

Designated Approving Authority (DAA). The DAA is an official with the authority to formally assume the responsibility for operating a system or network at an acceptable level of risk. The person who holds this position varies between the MAJCOMs, and can be the Wing commander, Communication Squadron commander, or other designated personnel.

Certification Authority (CA). The CA is the official responsible for performing the comprehensive evaluation of the technical and non-technical security features of an information technology (IT) system and other safeguards, made in support of the accreditation process, to establish the extent that a particular design and implementation meet a set of specified security requirements. The position falls within the Base Communication Squadron.

Information Technology Security (ITSEC). ITSEC is protection and maintenance of confidentiality, integrity, availability, and accountability of IT against unauthorized access to or modification of information, whether in storage, processing or transit, and against the denial of service to authorized users, including those measures necessary to detect, document, and counter such threats.

System Security Authorization Agreement (SSAA). The SSAA is a formal agreement among the DAA(s), the CA, the IT system user representative, and the program manager. It is used throughout the entire DITSCAP to guide actions, document decisions, specify ITSEC requirements, document certification tailoring and level-of-effort, identify potential solutions, and maintain operational systems security.

Security Test and Evaluation (ST&E). ST&E conducts the examination and analysis of the safeguards required to protect an IT system, as they have been applied in an operational environment, to determine the security posture of that system.

DOD Information Technology Security Certification & Accreditation Process

The DOD Information Technology Security Certification & Accreditation Process (better known as DITSCAP) establishes a standard process, set of activities, general task descriptions, and a management structure to certify and accredit IT systems that will maintain the security posture of the DII. The DITSCAP focuses on protecting the DII by presenting an infrastructure-centric approach for Certification and Accreditation (C&A). The DITSCAP is designed to be adaptable to any type of IT and any computing environment and mission. The process should be adapted to include existing system certifications and evaluated products.

The process is designed to certify that the IT system meets the accreditation requirements and that the system will continue to maintain the accredited security posture throughout the system life-cycle. The users of the process shall align the process with the program strategy and integrate the process activities into the system life-cycle. While DITSCAP maps to any system life-cycle process, its four phases are independent of the life-cycle strategy.

The key to the DITSCAP is the agreement between the IT system program manager, the DAA, the CA, and the user representative. These managers resolve critical schedule, budget, security, functionality, and performance issues. This agreement is documented in the SSAA that is used to guide and document the results of the C&A. The objective is to use the SSAA to establish a binding agreement on the level of security required before the system development begins or changes to a system are made.

The DITSCAP components are composed of phases, activities, tasks, and steps. There are four phases: definition, verification, validation, and post accreditation. Each phase is composed of

activities that are in turn composed of tasks. Each certification analysis task is composed of one or more steps as determined by the level of certification analysis required. The following table shows the complexity of the DITSCAP process. You are not expected to be an expert; it is presented to give you a familiarization of the entire process.

Relationship of Phases, Activities, and Tasks		
Phase	**Associated Activities**	**Associated Task**
Phase 1, Definition.	Document mission need.	Determine and document mission functions.
	Conduct registration.	Register the system - inform the DAA and the user representative that a system will require C&A support.
		Prepare mission description and system identification.
		Prepare environment and threat description.
		Prepare system architecture description.
		Determine the ITSEC class.
		Determine the system security requirements.
		Identify organizations that will support the C&A.
		Tailor the DITSCAP tasks, determine the C&A scope, level-of-effort, and prepare the DITSCAP plan.
		Develop the draft SSAA.
	Perform negotiation.	Review the draft SSAA.
		Conduct the CRR.
		Approve the SSAA.
	Prepare the SSAA.	
Phase 2, Verification.	Refine the SSAA.	
	Support system development activities.	
	Perform certification analysis.	System architecture analysis.
		Software design analysis.
		Network connection rule compliance analysis.
		Integrity of integrated products analysis.
		Life-cycle management analysis.
		Vulnerability assessment analysis.
	Assess analysis results against SSAA requirements.	
Phase 3, Validation.	Refine the SSAA.	
	Certification evaluation of the integrated system.	ST&E.
		Penetration testing.
		TEMPEST and red-black verification.
		Validation of COMSEC compliance.
		System management analysis.
		Contingency plan evaluation.

		Risk-based management review.
	Develop recommendation to the DAA.	CA's recommendation.
	DAA accreditation.	
Phase 4, Post Accreditation.	Maintenance of the SSAA.	Review the SSAA.
		Obtain approval of changes.
		Document changes.
	System operation.	System maintenance.
		System security management.
		Contingency planning.
	Change management.	Support system configuration management.
		Risk-based management review.
	Compliance validation.	Review the SSAA.
		Physical security analysis.
		Procedural analysis.
		Risk-based management review.

Table 2–1. Relationship of phases, activities, and tasks in DITSCAP.

The most current information on the DITSCAP process and requirements can be found on their website: http://iase.disa.mil/ditscap/DitscapFrame.html.

System Security Authorization Agreement

The SSAA is a living document that represents the formal agreement among the DAA, the CA, the user representative, and the program manager. The SSAA is developed in phase 1 and updated in each phase as the system development progresses and new information becomes available. At minimum, the SSAA should contain the information in the following sample format:

1. MISSION DESCRIPTION AND SYSTEM IDENTIFICATION

1.1. System name and identification.

1.2. System description.

1.3. Functional description.

1.3.1. System capabilities.

1.3.2. System criticality.

1.3.3. Classification and sensitivity of data processed.

1.3.4. System user description and clearance levels.

1.3.5. Life-cycle of the system.

1.4. System CONOPS summary.

2. ENVIRONMENT DESCRIPTION

2.1. Operating environment.

2.2. Software development and maintenance environment.

2.3. Threat description.

3. SYSTEM ARCHITECTURAL DESCRIPTION
   3.1. Hardware.
   3.2. Software.
   3.3. Firmware.
   3.4. System interfaces and external connections.
   3.5. Data flow (including data flow diagrams).
   3.6. TAFIM DGSA (reference (o)), security view.
   3.7. Accreditation boundary.
4. ITSEC SYSTEM CLASS
   4.1. Interfacing mode.
   4.2. Processing mode.
   4.3. Attribution mode.
   4.4. Mission-reliance factor.
   4.5. Accessibility factor.
   4.6. Accuracy factor.
   4.7. Information categories.
   4.8. System class level.
   4.9. Certification analysis level.
5. SYSTEM SECURITY REQUIREMENTS
   5.1. National and DOD security requirements.
   5.2. Governing security requisites.
   5.3. Data security requirements.
   5.4. Security CONOPS.
   5.5. Network connection rules.
    5.5.1. To connect to this system.
    5.5.2. To connect to the other systems defined in the CONOPS.
  5.6. Configuration and change management requirements.
  5.7. Reaccreditation requirements.
6. ORGANIZATIONS AND RESOURCES
   6.1. Identification of organizations.
      6.1.1. DAA.
      6.1.2. CA.
      6.1.3. Identification of the user representative.
      6.1.4. Identification of the organization responsible for the system.
      6.1.5. Identification of the program manager or system manager.
   6.2. Resources.

6.2.1. Staffing requirements.

6.2.2. Funding requirements.

6.3. Training for certification team.

6.4. Roles and responsibilities.

6.5. Other supporting organizations or working groups.

7. DITSCAP PLAN

7.1. Tailoring factors.

7.1.1. Programmatic considerations.

7.1.2. Security environment.

7.1.3. IT system characteristics.

7.1.4. Reuse of previously approved solutions.

7.1.5. Tailoring summary.

7.2. Tasks and milestones.

7.3. Schedule summary.

7.4. Level of effort.

7.5. Roles and responsibilities.

Appendices shall be added to include system C&A artifacts. Optional appendices may be added to meet specific needs. Include all documentation that will be relevant to the systems' C&A.

APPENDIX A. Acronym list

APPENDIX B. Definitions

APPENDIX C. References

APPENDIX D. Security requirements and/or requirements traceability matrix

APPENDIX E. Security test and evaluation plan and procedures

APPENDIX F. Certification results

APPENDIX G. Risk assessment results

APPENDIX H. CA's recommendation

APPENDIX I. System rules of behavior

APPENDIX J. Contingency plan(s)

APPENDIX K. Security awareness and training plan

APPENDIX L. Personnel controls and technical security controls

APPENDIX M. Incident response plan

APPENDIX N. Memorandums of agreement - system interconnect agreements

APPENDIX O. Applicable system development artifacts or system documentation

APPENDIX P. Accreditation documentation and accreditation statement

Certificate of networthiness (CoN)

The term "networthiness" is used to describe the suitability of a system (hardware or software) to be implemented, operated, and maintained in a specified environment. A system deemed to be networthy can be implemented and sustained while providing its intended functionality in a specified network environment without degrading the environment beyond specified limits or introducing unacceptable security risks. Parameters that are used to determine networthiness include but are not limited to: compatibility with hardware and software that make up the Air Force's network infrastructure; compliance with architectural standards; logistic support; user training requirements; user interfaces; certification of spectrum use; and network specific parameters. Networthiness is defined in the Command, Control, Communications, Computers and Intelligence Support Plan (C4ISP) Preparation Guide.

212. Equipment installation/initial inspection

Not much happens until the equipment is actually placed on order because requirements get added, changed, or even canceled. It is good to be proactive and be ready when the equipment arrives. However, you wouldn't want to have water, drains, and power installed in a room, then have the section change their mind of where they want the equipment, or have the requirement canceled altogether. Once a purchase order or contract for the equipment has actually been "cut", you need to begin the next phase of the project: planning the equipment installation. Of course, if the emergency room ordered a new defibrillator, there isn't much that needs to be done in terms of planning the installation. However, if cardiology ordered a new cardiac catheterization laboratory, that is a different story. No matter what level of installation an equipment item requires, your shop is tasked with installing the equipment or overseeing the installation by a contractor. When installing equipment, the Medical Equipment Repair Center (MERC), Clinical Engineering branch, and BMETs from other bases are excellent sources of information, especially if you find yourself involved in a complicated installation project. A successful installation depends on several factors, but begins with proper planning.

Planning

Planning for the equipment really started early in the procurement process—at the evaluation stage. At that time, the BMETs identified the utility and structural requirements of the new equipment. During its review, facility management identified and/or verified that the needed utilities or structural requirements were available. If changes are needed, they will not be initiated until a contract has been awarded for the purchase of the equipment. This is due to the long lead time for the actual purchase of the equipment and possible changes to the requirements. One thing to remember when planning is you don't have to be an expert on all aspects of a project, but you do need to know who the experts are and where to find them.

Coordinating and supervising

The coordination phase of any project is crucial. You must make contact with all parties discussed in this lesson to ensure that each knows exactly what is expected of them. This could be as simple as having an additional outlet installed to a full blown project with multiple players. Also remember, if a civilian agency is installing the equipment, you (the local BMET) are the government's representative and must ensure the equipment is installed correctly and safely in accordance with government and local instructions. In other words, don't just send the contractor out alone to do the job—spend time with them as the installation is done. Pay attention to the details of the installation to ensure that all stipulations of the contract are being met. If you have questions or doubts about what the installer is doing, you should politely ask questions—remember the government is paying the bill! If you feel that you are not receiving satisfactory answers, contact your supervisor or the MEMO for assistance. Once the installation is complete, the local BMET, or in some cases the MERC, is the final approval authority of most manufacturer or contracted installations.

Initial inspection

The final process of receiving a new equipment item is performing the actions associated with the initial or acceptance inspection. When a new piece of equipment arrives at your facility, the initial/acceptance inspection requires a coordinated effort between the maintenance shop and MEMO. Before it can be released to the user, a medical device must undergo a complete initial/acceptance inspection by MER personnel. The initial/acceptance inspection is documented and a copy of the initial/acceptance inspection work order is kept in the equipment data file (EDF). Discrepancies noted during an initial/acceptance inspection are reported to MEMO, which initiates a "Report of Discrepancy" to investigate any problems with a new equipment item. Each maintenance shop should have a set procedure for the completion of initial/acceptance inspection requirements. You are responsible for completing the initial/acceptance inspection of newly procured biomedical equipment. You also inspect all nonmedical equipment used in patient areas in accordance with AFI 41–201, *Managing Clinical Engineering Programs.*

One important point should be brought up before we continue. You should always do your best to ensure that initial/acceptance inspections are performed in a timely manner. Nothing will irritate a doctor or MTF section more than knowing that their new equipment has arrived, but they can't use it because it's waiting on medical maintenance.

213. Equipment replacement

The last phase in the life of an equipment item is the turn-in and subsequent replacement of the item. As with all other phases of an equipment item, BMETs are involved with this process as well. We'll begin by discussing recommendations for equipment replacement and then we'll cover some details about turning-in an equipment item.

Once a piece of equipment is placed into use, its life span may cover many years. Periodically its condition should be assessed to determine its serviceability. At some point it will be declared no longer useable (either for a lack of serviceability or due to outdated technology) and must be replaced. In determining serviceability of medical equipment in the MTF, your shop is responsible for documenting the Equipment Replacement Report (Three-year Equipment Replacement Report in the old Medical Logistics (MEDLOG) system). This new report is requested from the *Equipment Management* (EM) module of DMLSS. Use the following information to print out the report.

- EM>Reports>Standard Inquiry>Equipment Replacement Report.
- Funds Type: Capital or Expense.
- Number of Years: from 1 to 5.
- Organization: Select organization desired.
- Customer: Leave blank for entire organization or select particular customer.

MEMO is responsible for printing out and distributing the Equipment Replacement Report to the equipment custodians as part of the budgeting process. You and your BMETs need to review it and make comments (if any) about each equipment item.

1. Periodically evaluate the condition of equipment and assign a BMET evaluation code that reflects the current condition of the equipment. Accuracy of this code in DMLSS is important because it is part of the criteria for an item to appear on the equipment replacement schedule.
2. Recommend that equipment users submit a request for replacement equipment when the historical maintenance records indicate that the cost to repair would exceed the maximum repair allowance, the failure rate is excessive, the equipment is considered non-supportable due to non-availability of repair parts or service, or any other condition which technically or economically justifies replacement action. In addition, equipment users should be aware of changing technology and should submit requests for replacement equipment when it can be

clearly shown that the replacement item would be more economical to operate and maintain, clinically more acceptable, or technologically improved.

3. Review, the report annually, making recommendations based on historical maintenance data and continued ability to maintain the equipment in a serviceable condition. In activities that do not have automated equipment historical records, MER can assist equipment custodians and MEMO in preparing a list of equipment that should be replaced in the coming fiscal year. In this situation, prepare the list annually before budget submission and MEMO should submit it to the MLFC.

NOTE: If you find unserviceable equipment, which was centrally procured, you must report the equipment to AFMLO/SGSLE. If you discover unserviceable patient movement item (PMI) Engineering branch equipment, you must report it to PMI Headquarters (AMC/SGSL) and Clinical

Self-Test Questions

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

210 Accountability and inventory

1. What are the overall objectives of the Medical Equipment Management Program?

2. Match the responsibility in column A with the appropriate office/person in column B. Each office/person in column B can be used once, more than once, or not at all.

Column A

___ (1) Establishes a command medical ERAA.
___ (2) Appoints disinterested Report of Survey investigating officers as required.
___ (3) Establishes a CMEMO.
___ (4) Appoints, in writing, property custodians to support medical logistics in the requisition, management, accountability and maintenance of equipment in the using activities.
____ (5) Validates equipment requests with a unit cost of over $100,000 for need, manpower, and O&M cost concerns.
___ (6) Manages the MTF medical equipment management program.
____ (7) Trains account custodians on equipment management procedures and assist in the preparation of equipment requests.
____ (8) Administers and monitors the command medical equipment management program.
___ (9) Maintains records of all MAJCOM investment equipment requests.
____ (10) Sends Clinical Engineering branch a prioritized list of all approved unfunded investment equipment requests, as of 1 October each year, to arrive NLT 20 October.
___ (11) Centrally manages investment equipment funding, execution, and budget requirements.
___ (12) Recommends approval or disapproval of equipment requests submitted by MEMO for equipment within prescribed allowances.
___ (13) Has overall program responsibility.
___ (14) Appoints a qualified 7-level TSgt (or higher), as responsible MEMO officer for the MTF.

Column B

a. AF surgeon general.
b. Clinical Engineering branch.
c. MAJCOM surgeon general
d. Command Medical ERAA
e. Command MEMO (CMEMO)
f. MTF commander
g. Medical ERAA board
h. MEMO officer
i. Equipment (property) custodian
j. Senior Biomedical equipment technician

3. How is equipment accountability transferred?

4. Where can you find guidance on managing repair parts?

5. What should the bench stock inventory letter contain?

6. How often are physical equipment inventories performed?

211. Evaluating Requests

1. Where can you find the form for the technical evaluation?

2. What authority does the DAA have? Who is this person?

3. What is the DITSCAP designed to do?

4. Who does the DITSCAP agreement involve?

5. What document is produced from the DITSCAP?

6. What are the four phases of the DITSCAP?

7. Which DITSCAP phase(s) is the SSAA reviewed/refined?

8. What are the seven main headings of the SSAA?

9. What is *networthiness*?

212. Equipment installation/initial inspection

1. Why are facility modifications *not* accomplished as soon as the need is established?

2. What is the BMETs responsibility on a contractor-installed piece of equipment?

3. Why is it important to perform the initial inspection in a timely manner?

213. Equipment replacement

1. Explain how to print out the Equipment Replacement Report for your shop.

2. What is MEMO's responsibility for the Equipment Replacement Report?

3. What does the BMET do with/to the Equipment Replacement Report?

2–2. Money, Money, Money

As a 5-level you didn't need to worry about where the money came from to make things happen in your shop. The money didn't magically appear and there is not a bottomless pot of money either. The budget and finance process for DOD and the Air Force is very complicated. A basic understanding of budget and finance is essential for managing a BMET shop.

214. Financial plan

Money, it's what make the world go round, right? The Air Force operates the Defense Health Program (DHP) account for our non-combat support medical activities. The Assistant Secretary of Defense, Health Affairs, prepares and submits a unified medical program to provide resources for all medical activities within DOD.

Executing the medical budget

The Office of the Secretary of Defense(OSD)/Health Affairs, through TRICARE Management Activity (TMA), issues funds to AF surgeon general, which then issues funds to MAJCOMs for distribution to MTFs. The Air Force will continue to pay for applicable military personnel costs centrally using the military personnel appropriation. The military departments retain civilian medical personnel end strengths. To ensure proper accountability for civilian end strength utilization, each installation will pay medical civilian personnel using its own O&M account and receive reimbursement from the DHP operating appropriation.

Here is a simplified version of the how the money flows from the OSD all the way to the cost center (CC) in your MTF.

> OSD/Health Affairs > TRICARE Management Activity (TMA)>Air Force Surgeon General>MAJCOM > MTF > Cost Center

Budget activity groups

MTF commanders, resource management personnel, and flight commanders at all levels must review and manage the budget activity group (BAG) funding structure which was mandated by the TMA. BAGs are the first level at which the Office of the Under Secretary of Defense for Health Affairs can compare dollars across the services. Within the MTF, BAGs are broken down into seven distinct areas:

1. IN-HOUSE CARE.
    - Medical Centers, Hospitals & Clinics.
    - Dental Care Activities.
    - Pharmaceuticals.
2. PRIVATE SECTOR CARE.
3. CONSOLIDATED HEALTH SUPPORT.
    - This is your BAG!
4. EDUCATION AND TRAINING.
    - Health Professions Scholarship Program.
    - Other Education and Training.
5. BASE OPERATIONS/COMMUNICATIONS.
    - Minor Construction.
    - Maintenance & Repair.
    - Real Property Services.
    - Base Communications.
    - Base Operations.
    - Environmental Conservation.
    - Pollution Prevention.
    - Environmental Compliance.
    - Visual Information Systems.
6. MANAGEMENT ACTIVITY.
7. INFORMATION MANAGEMENT.
    - Central Information Management (IM).
    - Service Medical IM/Information Technology (non-central).

BAGs are the new and improved method the Air Force Manpower Standard (AFMS) is using in the budget formulation and resource allocation process. Funds are targeted into one of the seven BAGs listed above. The money for the BMET shop budget comes out of BAG #3, Consolidated Health Support. MTFs using BAGs in the budgetary process use five digit identifiers or program element codes (PEC)—i.e., the first zero in the six-digit identifiers listed above are eliminated at the MTF level.

Program element code

PECs are five-digit number identifiers that depict the specific program in which moneys are expended. A PEC is a grouping of forces, manpower and costs associated with a military capability or support activity. They are often grouped together into BAGs.

Element of expense investment code

An element of expense investment code (EEIC) is a three to five-digit number that indicates the type of costs incurred (commodities and services). For instance:

- 409XX = TDY, Travel.
- 572XX = Supplemental Care.
- 604XX = Medical Supplies.
- 619XX = Government Purchase Card (Services).

Responsibility center/cost center code

A responsibility center (RC) is an organizational unit, headed by an officer or supervisor who is responsible for the management of resources in the unit and who, in most instances, can significantly influence the expenses incurred by the unit.

A CC is an organizational subdivision under the supervision/control of a resource advisor (RA) used for the purpose of cost accumulation, control, and fund distribution. The CC is an entity or unit of activity subordinate to a responsibility center. The RC/CC code is a four-digit code used by the accounting system to monitor and report purchases by a work center. For example:

- XX5761 = Medical Equipment Repair.
- XX5741 = Facilities Management.

215. Medical budget roles and responsibilities

To say that the medical budget is a complex system would be a gross understatement. There are so many different activities that must be done by so many different personnel in so many different agencies that it sometimes may appear overwhelming. Don't get alarmed. The key is not for you as a 7- level BMET to become an expert in all areas of the formulation and management of the MTF budget process. What you do need to achieve is a solid foundation of the process and the roles of the essential personnel within the budget development.

Any MTF commander will certainly tell you that the first essential link to an MTF's successful fiscal management is to employ the services of a well-informed resource advisor. Most resource advisors would tell you that employing cost center mangers (CCM) who understand their role in the process are another vital link to fiscal management. In this lesson we describe the roles and functions of these two key players.

Every section within the facility plays a large role with the formulation of the budget. You may be called upon to be the CCM for your section or assist with some of the functions.

The MTF commander and the resource advisor do not complete the task of formulating the budget behind closed doors with no assistance from the MTF personnel. They rely heavily on squadron commanders, flight commanders, superintendents, noncommissioned officers in charge (NCOIC), and others for accurate planning and projections.

RA—the pivotal link

The RA is the MTF commander's "right hand" on most financial matters. With the numerous responsibilities that the MTF commander has, he or she relies heavily on the expertise of the RA. The following list denotes qualities and skills that are essential for RAs to possess:

- A working knowledge of the organization's mission, the mix of resources required to accomplish the mission, and the historical cost record.
- Knowledge of the accounting system for operations, the procurement system, and the supply system, with particular emphasis on data entry, flows and reports produced.
- An ability to distinguish between apparent and real causes.
- An ability to deal successfully with personnel in subordinate, lateral and higher level organizations.
- A questioning nature with mature judgment, usually resulting from practical experience.

The RA's right hand—the cost center manager

The RA should establish a good working relationship with all of the MTF's CCMs. Just as the MTF commander relies heavily on the RA, the RA relies heavily on all of the CCMs within the MTF.

The CCMs are in the best position to see how funds are being expended in their RC. On a daily basis they regulate the consumption of resources in the performance of their duties and is the focal point for the budgeting process. Do more with less, scarce resources, and cut backs are examples of typical AF jargon that we have all heard numerous times before.

Cost containment is the catch phrase that each responsible CCM should work by. In today's tough, competitive financial times the CCMs must ensure all of our scarce resources are spent wisely and effectively. And who better can monitor the dollars exhausted in an MTF than the CCMs working in the various sections throughout the MTF?

The RA is responsible for training CCMs within the MTF. Generally, the RA is quite receptive to the concerns of the CCMs because he or she realizes the effect that they may have on the overall system. Below are some of the responsibilities of the CCM:

- Review all cost center lists and backorder lists. Medical Logistics Flight personnel are the office of primary responsibility (OPR) for these documents.
- Evaluate stock supply levels to determine sufficiency. Compare backorder items against requirements; temper this information with the fact that the maximum authorized stock level may not be able to be monetarily supported.
- Contact the Medical Logistics Flight; get a thorough understanding of your supply and equipment accounts, and learn about the pipeline delays in obtaining your requirements. Become familiar with the complexities of the local purchase system and procedures.
- Inventory all of your equipment. Ensure all needed repairs are made and items are replaced, if necessary
- Regulates on a day-to-day basis the consumption of man-hours, supplies, equipment, and services.
- Shifts resources to, from, or between CC to ensure a balanced program of mission accomplishment within available resources.
- Starts building block process of the financial plan.
- Develops resource requirements and narrative justification.
- Determine the validity of the financial plan.
- Fosters daily awareness of the relationship between resources used.
- Provides the basis for realignment of resources as approved by superiors.

CCMs should always have a thorough understanding of where their funds are being expended. They should establish controls and procedures so that monitoring, orders, receipts and backorders can be done routinely and effectively. The RA can provide valuable assistance to help establish these controls and procedures.

Financial documents

As a CCM you will be responsible for understanding the different documents and forms that are related to the tasks of a CCM. Below you will find a description of the major Air Force forms that you will most often deal with.

AF Form 9 Request for Purchase

The form is used to request the purchase of goods or services through channels other than supply. The intent of the form is (1) to provide sufficient information for contracting to issue a contract and (2) for the Financial Services Office (FSO) to set aside funds for the requirement. The requesting activity

numbers these documents sequentially, starting at the beginning of each fiscal year. This information is entered into Automated Business Services System (ABSS) system for review and routing approval. ABSS is the computer system that links Finance, Base Contracting, and Base Units (MDG) together.

AF Form 406, Miscellaneous Obligations/Reimbursement Document

Miscellaneous obligation/reimbursement documents (MORD) are used to establish unfilled customer orders between the ordering and performing activities in the accounting records and to record estimates and actuals for such expenses/reimbursements as monthly telephone and utility charges. The MORD must be signed by the individual preparing it and by a certifying officer stating that funds are available.

AF Form 616, Fund Cite Authorization

The Fund Cite Authorization (FCA) form is used to issue funds to other Air Force units when it's impractical to route each request for funds through the Accounting Liaison Office (ALO). The FCA may be issued to on-base activities, geographically separated detachments, operating locations, or units on temporary duty (TDY) away from their home station. The most common uses of FCAs are for blanket purchase agreements and travel orders.

DD Form 448, Military Interdepartmental Purchase Request

DD Form 448, Military Interdepartmental Purchase Request is commonly referred to by its acronym, "MIPR." This form is used when a unit needs to request goods or services from another DOD agency. Like an AF Form 9, the unit's approving official signs the MIPR and the ALO certifies fund availability. But instead of sending the MIPR to contracting, it is sent to the DOD activity.

216. Forecasting and budgeting

Certain supplies and equipment must be available for your section to complete its mission. Sooner or later you'll become involved in forecasting for equipment and supplies. There is nothing difficult about forecasting, but it does require a certain amount of planning.

From your own personal experience, you know that you must follow a budget to meet your expenses and get the most from your dollars. If you continually buy on whims without planning, your paycheck is soon gone and times may be tough until your next payday. The Air Force is much the same. The Air Force must justify and submit a detailed budget plan before it can receive money. Also, like your own paycheck, the money available goes only so far. Only the most essential items are approved for purchase.

Forecasting equipment requirements

If your section expects to make realistic budget requests, a long-range equipment program must be established and continued. This program becomes a long-range plan for (1) replacing existing equipment as it wears out through normal use and (2) programming the procurement of new equipment.

Forecasting for supplies

Unlike your equipment, Medical Materiel forecasts your supplies for you. Your need for supplies for a given year is determined on what you were issued in the previous year. Of course, this does not mean that if you didn't use an item last year you won't be able to order it this year.

Equipment and supply budgeting

Just as with forecasting, sooner or later you'll become involved in budgeting for the supplies and equipment you use in your department. There is nothing difficult about budgeting either, although it does require a certain amount of careful planning as does forecasting.

Supply and equipment budgeting is done during the months of December or January. The resource management office (RMO) is responsible for the preparation and submission of the annual budget for

the entire medical facility. When RMO requests a fund requirement for supplies, study your previous supply expenditures. To determine how much you need for supplies, review the last fiscal year supply records and what you spent during the first quarter of the current year. This is a simple matter since your monthly issue list shows a total dollar amount on the last page of each list. From this information you should be able to predict approximately how much you'll need, based on previous expenditures. Also, consider any upcoming changes in the workload and type of operative changes or a mission change that might affect your requirements.

The equipment budget is based on new and replacement equipment needs. The Equipment Replacement Report and MEMO approved/unfunded files are the basis for budget inputs. While projecting future equipment needs, keep in mind that the MTF commander is the final approval authority for all equipment requests.

Alternate sources

Some things you want to be familiar with as a new manager are: how to get a suggested source? There are three alternate sources you can use to find repair parts: General Service Administration (GSA) E-Buy, Decentralized Blanket Purchase Agreements (DBPA), and the Electronic Catalog (ECAT).

GSA

One way is using GSA Advantages E-Buy resource to request electronic quotes from many companies.

DBPA

The Defense Supply Center Philadelphia (DSCP) has arranged many Decentralized Blanket Purchase Agreements (DBPA) for the repair and calibration of selected equipment. A list of current DBPAs appears in the Air Force Medical Logistics Letter (AFMLL), and information on these contracts is available through your medical logistics office. You can find more information on DBPAs in the Procurement section of the AFMLO website: https://medlog.detrick.af.mil/index.cfm.

ECAT

Contract pricing is negotiated by DSCP contracting specialists. Upon award of the contract, the vendor's commercial catalog is uploaded into ECAT. The catalogs include all items that various eligible suppliers make available to government customers. In many cases, the same item is made available to the DOD ECAT user from several approved ECAT vendors. These items are priced using a fixed discount off the vendor's catalog price. All ECAT suppliers have electronic commerce capability, or access to the Internet (Supplier Interface), and provide some of the following information relative to their commercial catalog: product names, prices, graphics, and detailed item descriptions. All ECAT items indicate a "Total Delivered Price" to the customer. This price is defined as "total cost" in that it includes all transportation/distribution and administrative costs. You can find more information on ECAT in the Procurement section of the AFMLO website: https://medlog.detrick.af.mil/mlc/site_apps/afmlo/procurement/ECATMenu.cfm*ECAT function*

The DSCP system which "houses" the vendor catalogs will do the following:

- Automate order processing.
- Search by key word, such as manufacturer name, part number across multiple vendor catalogs.
- Query results will be returned in ascending price order regardless of individual catalogs.
- Provide detailed text and pictures in catalog plus other attribute information.
- Support current and state-of-the-art commercial business practices.
- Accept Government Purchase Card (GPC)/credit cards for payment.
- Incorporate a financial gatekeeper or approval function as required.

- Contain an Order Builder and Shopping Cart (ordering function of regular and repetitive items).
- Order multiple items from multiple producers on single order form (customer does not fill out different form for each manufacturer).
- Automate order status and provide status to customer.
- Provide a means of assigning different order numbers to repeat orders of the same items.
- Provide repetitively purchased items in separate convenient reorder lists.
- Automatically compile ordering data by specific customer and by all customers.
- Produce reports for monitoring customer buying habits and preferences.
- Maintain a two year order history.
- Provide simple registration customized identification (ID) profile.
- ECAT prices are free on board (FOB) destination.
- Show tiered pricing.
- ECAT interfaces with DMLSS.

To use ECAT, you'll need to register for a login at the DMMonline website:

- https://dmmonline.dscp.dla.mil/registration/SiteLogin.aspx

If you want a supplier (or current supplier's parts catalog) added to ECAT, e-mail your request to the ECAT Help Desk (dscpecathelp@dla.mil). Your request will be forwarded to the Contracting officer for inclusion in future solicitations for new ECAT vendors.

The ECAT Help Desk can be reached toll free on (800) 290–8201 or e-mail: dscpecathelp@dla.mil.

Self-Test Questions

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

214. Financial plan

1. Explain how the money gets from DOD to the local CC.

2. What are the seven "BAG"s of money? Which one funds the BMET shop?

3. Which EEICs are you likely to use?

215. Medical budget roles and responsibilities

1. Match the responsibility in column A with the appropriate office/person in column B. Each office/person in column B can be used once, more than once, or not at all.

Column A	*Column B*
_____(1) Provides training to CCMs.	a. MTF commander
_____(2) Reviews all CC lists and backorder lists.	b. Resource advisor (RA)
_____(3) Working knowledge of the organization's mission, the mix of resources required to accomplish the mission, and the historical cost record.	c. Cost center manager (CCM)
_____(4) Shifts resources to, from, or between CC to ensure a balanced program of mission accomplishment within available resources.	d. Supply custodian
_____(5) Possesses knowledge of the accounting system for operations, the procurement system, and the supply system, with particular emphasis on data entry, flows and reports produced.	e. Equipment custodian
_____(6) Starts building block process of the financial plan.	
_____(7) Inventories all equipment and ensures all needed repairs are made and items are replaced.	

2. What is cost containment?

3. For what is the AF Form 9 used?

216. Forecasting and budgeting

1. What are the two parts of a long-range equipment program?

2. Who forecasts your supplies?

3. When is the supply and equipment budgeting accomplished?

4. What is a good basis to use for a budget?

5. What are three alternate sources you can use to find repair parts?

6. What is ECAT?

7. How can you gain access to ECAT?

8. Where can you find more information about ECAT?

2–3. Quality Assurance

Quality Assurance in the medical equipment repair arena is different than the flight line Quality Assurance Program. On the flight line, quality assurance refers to having someone check your work, and "testing/evaluating" your skills on an annual basis by observing you performing several tasks from your OJT records. On the medical side of the house, we don't have a formal QA section like the flight line does. In our world, Quality Assurance refers to:

- Modifying medical equipment.
- Documenting modifications.
- Safe Medical Device Act (SMDA).
- Health Insurance Portability and Accountability Act (HIPAA).
- Medical device recalls and hazard alerts.
- Medical equipment defect reporting.
- Initiating an Incident Investigation.
- Training equipment operators.

You have now seen a lot of information concerning various safety topics throughout the MTF, your shop, and specific equipment. Most of these issues are designed to prevent an accident from happening, but what happens if an equipment-related incident does occur? You need to know some basic information about what to do if something happens in your facility that relates to a piece of medical equipment.

In the following lessons, we will take a look at equipment modifications, how to comply with the SMDA and the Medical Device Reporting (MDR) program, and how to investigate an equipment-related incident.

217. Equipment modifications

A modification is a change in the design or assembly of an item of materiel to meet revised specifications, correct defects, or improve performance. As a BMET, this isn't something you will do on an everyday basis, but you need to know how to handle a modification when you see one. Complete instructions on formulating, performing and documenting modifications, are in AFI 41–201.There are two types of medical equipment modifications: *directed* and *BMET initiated*.

Directed

Modifications can be directed from the manufacturer or the Clinical Engineering branch. When a directed modification is issued, BMETs must accomplish all directed modifications within prescribed time limits and in strict accordance with the modification instructions. There will be detailed instructions on exactly how to perform the modification and who to report to that the modification was completed.

BMET initiated

A BMET can initiate a suggested modification if an item is satisfactorily serving the purpose for which it was designed, but use or testing show that its design, performance, maintenance upkeep, or

safety features can be improved. If medical equipment fails to perform according to its designed purpose, and you see a way to modify it to make it work, you must first submit a medical materiel complaint in accordance with AFI 41–201 and the Computerized Product Reporting System is available on the ECRI website at: http://www.ecri.org.

218. Medical materiel/equipment complaints

In a perfect world, we would never encounter an equipment problem or defect; however, I'm sure you have figured out by now that the world of medical equipment is not perfect! Because of this fact, you need to be familiar with how to handle an equipment complaint or incident. In this lesson we'll discuss the Safe Medical Device Act and some medical device reporting procedures.

The Safe Medical Device Act /Medical Device Reporting

Although the primary responsibility for compliance with the SMDA resides with the MTF's Quality Assurance and/or Risk Management office, the BMET shop may be called upon to provide input or act as the focal point for equipment related issues. The SMDA is covered in detail AFI 41–201.

The MDR program under the SMDA requires medical device related incidents to be identified and reported as soon as possible after their occurrence in order to initiate corrective action, prevent or minimize the occurrence of similar incidents, and comply with the reporting requirements of the Federal Food, Drug, and Cosmetic Act and Food & Drug Administration (FDA) regulations. The FDA requires that all reports concerning equipment that is suspected of causing injury or death be submitted within 10 days. The Clinical Engineering branch must receive notification within 48 hours of the incident. See table 2–2 for information that the SMDA of 1990 requires user facilities to report:

WHAT TO REPORT	REPORT FORM #	TO WHOM	WHEN (Federal Guidelines)	WHEN (Air Force Guidelines)
Death	Form FDA 3500A	FDA & Manufacturer	Within 10 work days	Within 48 hours
Serious injury	Form FDA 3500A	Manufacturer. FDA only if manufacturer unknown	Within 10 work days	Within 48 hours
Annual reports of death & serious injury	Form FDA 3419	FDA	January 1	N/A

Table 2–2. Summary of reporting requirements for user facilities.

Complete guidance for MDR for User Facilities can be found here:

- http://www.fda.gov/cdrh/mdruf.pdf
- http://www.fda.gov/cdrh/mdr/index.html
- https://medlog.detrick.af.mil/mlc/site_apps/clineng/library/index.cfm?action=list&type=5 (SMDA/MDR Guidance Document)

Medical Device Tracking Program

The final area of the SMDA we'll cover is tracking requirements for certain types of medical devices. The first category of device that must be tracked by the MTF is permanently implantable devices (whose failure would reasonably have serious adverse health consequences). Some examples include:

- Implantable pacemakers.
- Automatic implantable cardioverter/defibrillator
- Implantable infusion pumps.

- Replacement heart valve (mechanical only).
- Silicone gel-filled breast implants

As a BMET, you will probably not deal with items such as these, but another category of medical devices, which requires tracking (and ones you may encounter) are life sustaining or life-supporting devices used *outside* the MTF. The items that require tracking are:

- Breathing frequency monitors.
- Continuous ventilators.
- Ventricular bypass (assist) device
- DC defibrillators and paddles.

The FDA adds or removes items to/from the list depending on the likelihood of sudden, catastrophic failure; likelihood of significant adverse clinical outcome; and the need for prompt professional intervention. The current FDA guidance can be found here:

- http://www.fda.gov/cdrh/comp/guidance/169.html

You should check this on a regular annual basis (during an annual self-inspection would be a good time) to verify the list of equipment that requires tracking. When any traceable item is removed from service or transferred to another facility, you must notify the equipment manufacturer. If your MTF gains a traceable device, you must notify the manufacturer. Additionally, you will use the DMLSS system to track the equipment and its maintenance history.

Materiel complaints and device recalls

Materiel complaints and device recalls are easy to be confused with each other. A device recall usually stems from an incident and/or materiel complaint. An easy way to remember the difference between materiel complaint *types* and device recall *classes* is to think of the DMLSS "*Device Class*," a commonly used equipment search criteria. The following table shows a comparison between the Materiel Complaints and Device Recalls.

Type of Deficiency/Incident	Materiel Complaint	Device Recall
Defects directly responsible for, or are clearly capable of, causing accident, injury, or death to patients or staff. • Excessive operating temperatures at exposed surfaces, inadequate thermostatic controls or safety backup thermostats. • Insecure mounting or insufficient counterbalancing of heavy items. • Dangerously exposed moving parts, electrical shock hazards, or explosion hazards.	Type I	Class I & Class II
Design and/or production deficiencies that lead to unsatisfactory performance and *not* likely to cause adverse health consequences. • Inadequate or inaccurate labeling, instructions for operation or maintenance. • Inaccurate or unreliable diagnostic data outputs, control of the duration or quantity of energy applied to a patient for either diagnostic or therapeutic purposes. • Failure to comply with applicable Air Force or DOD purchase descriptions and specifications, federal standards, or manufacturer's own specifications. • Unacceptably rapid deterioration or frequent breakdowns under conditions of normal use.	Type II	Class III

Full, detailed guidance can be found in AFI 41–201 and the websites listed below:

- http://www.ecri.org/PatientSafety/ReportAProblem/Pages/default.aspx
- https://medlog.detrick.af.mil/mlc/site_apps/clineng/library/index.cfm?action=list&type=5 (SMDA/MDR Guidance Document)

219. Hazard notices and incident investigations

In the previous lesson you learned how, when, and why to report an equipment-related problem, but how do other MER shops find out about these problems so they can be corrected at their respective facilities? Well, this last lesson will discuss just that.

Hazard notices

As with most management programs, documentation is the key to managing hazard notices. The alert system provides a means for distributing information about medical device hazards, recalls, modifications, and other equipment safety issues. The system consists of two basic parts: identification and notification. In the *identification phase,* medical device users or maintenance personnel report problems encountered during equipment operation; in the Air Force, these reports are made through the materiel complaint system, which we previously discussed.

The second portion of the alert system is the *notification phase.* Medical device alert information identifying equipment hazards, recalls, and modifications is published and distributed by government and commercial sources to medical facilities around the world. These sources provide data to medical facilities on the corrective actions for each equipment alert. The actions may include recall or modification of the affected equipment or just provide a cross-feed of information about problems encountered at other medical facilities. MER is the focal point for the alert system in Air Force facilities. You must perform any maintenance actions specified in an equipment alert as well as provide information on alerts to equipment users in your facility.

Information sources

The alert system is made up of many organizations, each with its own responsibilities relating to medical device safety. The following table lists the organizations and their functions relating to medical device hazards.

Source	Required Actions
AFML List Server	Recalls published on the AFML list server are treated and documented as modifications. The title or other identifying information in which the recall notice appears is used to document historical maintenance records after compliance with manufacturer's recall instructions.
AFMLL	Recalls published in the AFMLL are treated and documented as modifications. The issue number of the AFMLL in which the recall notice appears is used to document historical maintenance records after compliance with manufacturer's recall instructions.
ECRI Health Device Alerts	Notices from ECRI on equipment hazards are also treated as modifications. ECRI alerts may also contain information for medical logistics on published recalls involving supply items.
Manufacturer	Activities notified directly by a manufacturer of a recall should take immediate action to implement the corrective procedures. You must then notify AFMLO/FOE, within 48 hours, of any manufacturer's recall that has not been previously published through ECRI or AFML list server notification.

Incident investigations

The final topic for this unit is incident investigations. An incident is defined as an event where equipment or a procedure has caused or may have caused injury to a patient, staff member, or visitor. When an incident involving a medical device occurs, the clinical engineering officer, senior BMET,

or civilian equivalent conducts a formal investigation in conjunction with the medical facility EOC officer, risk manager, or others as appropriate.

AFI 41–201 has very detailed instructions on the investigation procedures. You should review and become intimately familiar with them now. You also need to refer to them during an investigation to ensure nothing is overlooked. Documentation again, is the key. Document everything *every* step of the way. This is done by writing down settings and values, taking pictures, or downloading data from the equipment. Also, during the investigation maintain close coordination with personnel in your facility, such as your MLFC, risk manager, or MTF administrator.

With any luck, your facility won't be involved in an incident; but if it is, you can see it is not something to be taken lightly. Advanced preparation is the key to a successful program. Knowing what to do prior to an incident makes the process much easier if you have to conduct an investigation at your facility. To ensure that the procedures are well known, each MER facility must develop a local procedure, which clearly delineates the responsibilities for conducting an investigation. Each MER activity should also develop a program to keep equipment custodians and operators aware of their responsibilities in equipment-related incident investigations, and assist the quality assurance coordinator and the risk manager in the education of the custodians and operators. Finally, you must ensure that the responsibilities for conducting equipment incident investigations are included in the medical treatment facility's Quality Assurance/Risk Management (QA/RM) plan.

Self-Test Questions

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

217. Equipment modifications

1. Where can you find complete instructions on formulating, performing, and documenting modifications?

2. Explain the two types of modifications.

3. Who issues instructions on directed modifications?

4. If an item fails to perform according to its designed purpose what must you do before recommending a modification?

218. Medical materiel/equipment complaints

1. Which office in your MTF has the primary responsibility for compliance of the SMDA?

2. Which program under the SMDA requires medical device related incidents to be identified and reported as soon as possible after their occurrence in order to initiate corrective action, prevent or minimize the occurrence of similar incidents, and comply with the reporting requirements of the Federal Food, Drug, and Cosmetic Act and FDA regulations?

3. What are the federal and Air Force guidelines on reporting an incident that caused or could cause serious injury or death?

4. Where can you find complete guidance for Medical Device Reporting for User Facilities?

5. What are the four medical equipment devices that require tracking under the SMDA Medical Device Tracking Program?

6. Where can you find the current list of devices that are required to be tracked?

7. What materiel complaint *type* and device recall *class* is for defects directly responsible for, or are clearly capable of, causing accident, injury, or death to patients or staff?

8. What materiel complaint type and device recall class is for design and/or production deficiencies that lead to unsatisfactory performance and not likely to cause adverse health consequences?

219. Hazard notices and incident investigations

1. What action takes place during the identification phase of the medical device alert system?

2. Who is the focal point for the medical device alert system in Air Force facilities?

3. Briefly describe an incident as it relates to medical equipment.

4. Where can you find detailed instructions on incident investigation procedures?

5. Who do you maintain close coordination with during an incident investigation?

6. Why should you know how to handle an incident investigation?

Answers to Self-Test Questions

210

1. 1) Standardize the management of equipment in use at Air Force medical treatment facilities (MTFs). 2) Maintain equipment in-use and authorization records. 3) Keep the medical logistics flight commander (MLFC) informed through comprehensive and accurate reporting. 4) Promote economy, supply discipline and effective equipment management in support of the overall medical mission. 5) Ensure medical equipment meets accepted safety and professional standards. 6) Ensure investment equipment reporting meets established accounting standards.
2. 1) c.
   2) f.
   3) c.
   4) f.
   5) d.
   6) h.
   7) h.
   8) e.
   9) b.
   10) e.
   11) b.
   12) f.
   13) a.
   14) f.
3. It is processed through the MEMO to transfer the equipment to another property custodian or turn the item in to the MEMO.
4. AFI 41–201 and AFMAN 41–216.
5. 1). Overall accuracy in line items. 2) Total dollar amount. 3) Value of all overages. (4 Value of all shortages. 5) Recommended corrective actions. 6) Annotated Physical Inventory print out (as attachment).
6. Within 12 months of the previous inventory.

211

1. AFI 41–209, *Medical Logistics Support*, as Attachment 25.
2. Official with the authority to formally assume the responsibility for operating a system or network at an acceptable level of risk.
3. Be adaptable to any type of IT and any computing environment and mission.
4. IT system program manager, the DAA, the CA, and the user representative.
5. System Security Authorization Agreement (SSAA).
6. Definition, verification, validation, and post accreditation.
7. All phases.
8. (1) MISSION DESCRIPTION AND SYSTEM IDENTIFICATION, (2) ENVIRONMENT DESCRIPTION, (3) SYSTEM ARCHITECTURAL DESCRIPTION, (4) ITSEC SYSTEM CLASS, (5) SYSTEM SECURITY REQUIREMENTS, (6) ORGANIZATIONS AND RESOURCES (7) DITSCAP PLAN.
9. Suitability of a system (hardware or software) to be implemented, operated, and maintained in a specified environment.

212

1. You wouldn’t want to have water, drains, and power installed in a room, then have the section change their mind of where they want the equipment, or have the requirement canceled altogether.

2. As the government's representative you must ensure the equipment is installed correctly and safely in accordance with government and local instructions.
3. MTF section get whiny knowing that their new equipment has arrived, but they can't use it because it's waiting on medical maintenance.

213

1. EM>Reports>Standard Inquiry>Equipment Replacement Report.

   Funds Type: Capital or Expense.

   Number of Years: from 1 to 5.

   Organization: Select organization desired.

   Customer: Leave blank for entire organization or select particular customer.
2. MEMO is responsible for printing out and distributing the Equipment Replacement Report to the Equipment Custodians as part of the budgeting process.
3. Review it and make comments (if any) about each equipment item.

214

1. OSD/Health Affairs > TRICARE Management Activity (TMA)>Air Force Surgeon General>MAJCOM > MTF > Cost Center.
2. 1) IN-HOUSE CARE, 2) PRIVATE SECTOR CARE, 3) CONSOLIDATED HEALTH SUPPORT (BMET Funding), 4) EDUCATION AND TRAINING, 5) BASE OPERATIONS/COMMUNICATIONS, 6) MANAGEMENT ACTIVITY, 7) INFORMATION MANAGEMENT.
3. 409XX = TDY, Travel 619XX = Government Purchase Card (Services).

215

1. (1) b.
   (2) c.
   (3) b.
   (4) c.
   (5) b.
   (6) c.
   (7) c.
2. To ensure all of our scarce resources are spent wisely and effectively.
3. To request the purchase of goods or services through channels other than supply.

216

1. (1) Replacing existing equipment as it wears out through normal use and (2) Programming the procurement of new equipment.
2. Medical Materiel forecasts your supplies for you.
3. During the months of December or January.
4. Review the last fiscal year supply records and what you spent during the first quarter of the current year.
5. GSA e-Buy, DBPAs, and ECAT.
6. The ECAT is a DOD system where numerous vendor commercial catalogs are uploaded into once DSCP contracting specialists negotiate contract pricing and a contract is awarded.
7. Need to register for a login at the DMMonline website: https://dmmonline.dscp.dla.mil/registration/SiteLogin.aspx.
8. https://medlog.detrick.af.mil/mlc/site_apps/afmlo/procurement/ECATMenu.cfm.

217

1. AFI 41–201.
2. (1) Directed modifications - from the manufacturer or the Clinical Engineering Branch. When a directed modification is issued, BMETs must accomplish all directed modifications within prescribed time limits

and in strict accordance with the modification instructions. There will be detailed instructions on exactly how to perform the modification and who to report to that the modification was completed. (2) Initiated modifications - A BMET can initiate a suggested modification if an item is satisfactorily serving the purpose for which it was designed, but use or testing show that its design, performance, maintenance upkeep, or safety features can be improved.

3. Manufacturer or the Clinical Engineering branch.
4. Submit a medical materiel complaint in accordance with AFI 41–201.

218

1. MTF's Quality Assurance and/or Risk Management office.
2. Medical Device Reporting Program.
3. Federal guidelines require that all reports concerning equipment that is suspected of causing injury or death be submitted within 10 days. AF guidelines state that notification must be received within 48 hours of the incident.
4. 1) http://www.fda.gov/cdrh/mdruf.pdf, 2) http://www.fda.gov/cdrh/mdr/index.html, 3) https://afml.ft-detrick.af.mil/afmlo/clineng/library/index.cfm?action=list&type=5 (SMDA/MDR Guidance Document).
5. Breathing frequency monitors, continuous ventilators, ventricular bypass (assist) device, DC defibrillators and paddles.
6. http://www.fda.gov/cdrh/comp/guidance/169.html.
7. Materiel Complaint Type I and Device Recall Class I & Class II.
8. Materiel Complaint Type III and Device Recall Class III.

219

1. Medical device users or maintenance personnel report problems encountered during equipment operation; in the Air Force, these reports are made through the materiel complaint system.
2. Medical Equipment Repair (MER).
3. An event where equipment or a procedure has caused or may have caused injury to a patient, staff member, or visitor.
4. AFI 41–201.
5. Personnel in your facility, such as your MLFC, risk manager, or MTF Administrator.
6. Makes the process much easier if you have to conduct an investigation at your facility.

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.

45. (209) What type of medical treatment facility (MTF) does the Accreditation Association for Ambulatory Health Care (AAAHC) inspect?
    a. EMEDS.
    b. Ambulatory clinics.
    c. Hospitals.
    d. Medical centers.

46. (209) Where are Joint Commission standards published?
    a. Joint Commission website.
    b. AFPD 44–1, *Medical Operations.*
    c. AFPD 41–1, *Health Care Programs and Resources.*
    d. *Comprehensive Accreditation Manual for Hospitals (CAMH).*

47. (209) How often are Joint Commission surveys accomplished for *Continuing Accreditation*?
    a. Every 36 months.
    b. 19 – 39 months from the last survey.
    c. 24 – 36 months from the last survey.
    d. 30 – 36 months from the last survey.

48. (209) How much notice does Joint Commission give to the military for the unannounced *Continuing Accreditation* inspection?
    a. None.
    b. 5 days.
    c. 14 days.
    d. 30 days.

49. (209) What three areas make up the Environment of Care (EOC)?
    a. Power, plumbing, and HVAC.
    b. Buildings, equipment, and people.
    c. Treatment, patient, and operating rooms.
    d. Main MTF, Dental Clinic, and Emergency Room.

50. (209) What specific documentation does Joint Commission require?
    a. Work order completion %, no-defect work orders, and medical device alerts/recalls.
    b. Initial inspections, inspection and maintenance of equipment, and testing of sterilizers.
    c. Testing of sterilizers, renal dialysis water testing, and post-calibration radiation inspection.
    d. Equipment inventory, inspection and maintenance of life support equipment, and post-calibration radiation inspection.

51. (209) What is the senior Biomedical Equipment Maintenance Technician's (BMET) responsibility to the Environment of Care (EOC) committee?
    a. Co-chair the committee.
    b. Record minutes for the meeting.
    c. Attend the meeting strictly to answer any equipment questions that may come up.
    d. Provide updated metrics to whoever builds the briefing and brief the Medical Equipment portion at the meeting.

52. (209) What is a benefit of the Accreditation Association for Ambulatory Health Care (AAAHC) inspection?
    a. Inspection does not take as long to perform.
    b. The accreditation period is longer than Joint Commission.
    c. Simpler, less formal (and cheaper) process than Joint Commission.
    d. Acknowledged by more insurance companies, thus more reimbursables.

53. (209) For how long is the Accreditation Association for Ambulatory Health Care (AAAHC) full accreditation good ?
    a. 1 year.
    b. 2 years.
    c. 3 years.
    d. 5 years.

54. (209) Where are the Accreditation Association for Ambulatory Health Care (AAAHC) core standards applied?
    a. All organizations.
    b. Only clinics that provide I.V. sedation.
    c. Only the “core” clinics within the MTF.
    d. Only clinics that provide ambulatory care.

55. (210) In the medical equipment management program, who centrally manages investment equipment funding, execution, and budget requirements?
    a. AF surgeon general.
    b. Clinical Engineering branch.
    c. MAJCOM surgeon general.
    d. Command Medical Equipment Management Office (CMEMO).

56. (210) In the medical equipment management program, who maintains records of all major command (MAJCOM) investment equipment requests?
    a. AF surgeon general.
    b. Clinical Engineering branch.
    c. MAJCOM surgeon general.
    d. Command Medical Equipment Management Office (CMEMO).

57. (210) In the medical equipment management program, who appoints a qualified Medical Equipment Management (MEMO) officer?
    a. AF Surgeon General.
    b. MAJCOM Surgeon General.
    c. Command Medical Equipment Management Office (CMEMO).
    d. MTF commander.

58. (210) Who prioritizes all approved unfunded investment and expense equipment requests provided by Medical Equipment Management Office (MEMO)?
    a. Clinical Engineering Branch.
    b. Command Medical Equipment Management Office (CMEMO).
    c. Medical Equipment Review and Authorization Activity (ERAA) Board.
    d. MTF commander.

59. (210) Where can you find guidance on how to manage the medical equipment management program?
    a. AFI 41–201.
    b. AFI 41–209.
    c. FDA website.
    d. Clinical Engineering Branch website.

60. (210) When must the annual physical bench stock be accomplished?
    a. Before 31 December.
    b. Before 30 April.
    c. Before 30 September.
    d. After 1 October.

61. (210) What is *not* included in the bench stock inventory letter?
    a. Total dollar amount.
    b. Value of all shortages.
    c. Overall accuracy in line items.
    d. Report of Survey data for missing items.

62. (211) Where is the technical evaluation (Attachment 25) form found?
    a. AFI 41–201.
    b. AFI 41–203.
    c. AFI 41–209.
    d. AFMAN 41–216.

63. (211) What is *not* true about the System Security Authorization Agreement (SSAA)?
    a. It is a "living" document.
    b. Only required for the initial AF purchase of the item.
    c. Developed in phase 1 and updated in each phase as the system development progresses.
    d. Represents the formal agreement among the DAA, the CA, the user representative, and the program manager.

64. (212) What are good sources of information for complicated installation projects?
    a. Base Civil Engineers.
    b. MAJCOM functional manager.
    c. Manufacturer's Technical Assistance Hotline.
    d. Clinical Engineering branch and other BMETs.

65. (212) Why are utility or structural changes *not* initiated until after the contract has been awarded?
    a. CE is really busy and/or lazy.
    b. Funding is not available until after the award of the contract.
    c. Utility and structural changes are not completed until the equipment is on site.
    d. Long lead time for the actual purchase of the equipment and possible changes to the requirements.

66. (213) What is the last phase in the life of an equipment item?
    a. Trade-in for newer equipment.
    b. Proper demilitarization and disposal.
    c. Assignment of proper condition code and tag.
    d. Turn-in and subsequent replacement of the item.

67. (213) What is *not* a reason to recommend that equipment users submit a request for replacement equipment?
    a. The failure rate is excessive.
    b. The equipment is considered non-supportable due to non-availability of repair parts or service.
    c. When there is better technology available, which would require less maintenance and down time.
    d. When the historical maintenance records indicate that the cost to repair would exceed the maximum repair allowance.

68. (214) How many distinct areas [Budget Activity Groups (BAG)] of money are there within the medical treatment facility (MTF)?
    a. 3.
    b. 5.
    c. 7.
    d. 9.

69. (215) Who does the medical treatment facility (MTF) commander rely heavily upon for accurate budget planning and projections?
    a. Enlisted Top III and section NCOICs.
    b. Resource advisor, OICs and NCOICs.
    c. Medical Executive Council and other senior officers.
    d. Squadron commanders, flight commanders, superintendents, and NCOICs.

70. (215) Who is the medical treatment facility (MTF) commander's "right hand" on most financial matters?
    a. Senior BMET.
    b. Resource advisor (RA).
    c. Cost center manager (CCM).
    d. Resource Management officer in charge (OIC).

71. (215) Who is responsible for training cost center managers (CCM) within the medical treatment facility (MTF)?
    a. Senior BMET.
    b. Resource advisor (RA).
    c. MTF commander.
    d. Resource management OIC.

72. (216) What is included in the *total delivered price* of and electronic catalog (ECAT) order?
    a. Shipping and handling.
    b. Cost of overnight shipping.
    c. Small surcharge, shipping and handling.
    d. All transportation/distribution and administrative costs.

73. (216) Which is *not* an electronic catalog (ECAT) capability?
    a. Add new items "on-demand".
    b. Maintain a two year order history.
    c. Accept IMPAC/credit cards for payment.
    d. Search by key word, such as manufacturer name, part number across multiple vendor's catalogs.

74. (216) How do you get a supplier (or current supplier's parts catalog) added to electronic catalog (ECAT)?
    a. Contact your local Medical Logistics Flight.
    b. E-mail your request to the ECAT Help Desk.
    c. E-mail request to the Clinical Engineering Branch.
    d. Contact the supplier's customer service department.

75. (217) Who can issue a *directed* modification for you to perform?
    a. FDA.
    b. Manufacturer.
    c. Clinical Engineering branch.
    d. Manufacturer or Clinical Engineering branch.

76. (218) Who has the primary responsibility for compliance with the Safe Medical Device Act (SMDA)?
    a. Senior BMET.
    b. All equipment users and maintainers.
    c. Process Improvement/Regulatory Compliance (PIRC) office.
    d. MTF's Quality Assurance and/or Risk Management office.

77. (218) Which materiel complaint do you initiate for defects directly responsible for, or are clearly capable of, causing accident, injury, or death to patients or staff?
    a. Class I.
    b. Class III.
    c. Type I.
    d. Type III.

78. (218) Which device recall is for defects directly responsible for, or are clearly capable of, causing accident, injury, or death to patients or staff?
    a. Class I only.
    b. Class I & Class II.
    c. Type I only.
    d. Type I & Type II.

79. (219) Which phase of the materiel complaint system does medical device alert information identifying equipment hazards, recalls, and modifications is published and distributed by government and commercial sources to medical facilities around the world?
    a. Identification.
    b. Reporting.
    c. Notification.
    d. Publication.

80. (219) What is defined as an event where equipment or a procedure has caused or may have caused injury to a patient, staff member, or visitor?
    a. Event.
    b. Incident.
    c. Accident.
    d. Sentinel event.

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.

Glossary

Abbreviations and Acronyms

AE	aeromedical evacuation
AEF	aerospace expeditionary force
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
AFMS	Air Force Medical Service
AFMSA/SGMF	Air Force Medical Support Agency/Health Facilities Division
AFMSA/SGML	Air Force Medical Support Agency/Medical Logistics Division
AFOSH	Air Force Occupational Safety and Health
AFRC	Air Force Reserve Command
AFSC	Air Force specialty code
AFSOC	Air Force Special Operations Command
AFTH	Air Force Theater Hospital
AFTO	Air Force Technical Order
AFTTP	Air Force Technical Training Publication
ANG	Air National Guard
AP	awaiting parts
AS	allowance standard
ATC	air transportable clinic
ATH	air transportable hospital
BLS	basic life support
BMET	Biomedical equipment technician
CAGE	commercial and government entity
CAMH	Comprehensive Accreditation Manual for Hospitals
CCATT	critical-care air-transport teams
CDC	career development course
CMEMO	Command Medical Equipment Management Office

CONOPS	concept of operations
COR	contracting officer's representative
CR	computed radiography
DBPA	Decentralized Blanket Purchase Agreement
DLA	Defense Logistics Agency
DLIS	Defense Logistics Information Service
DMLSS	Defense Medical Logistics Standard Support (refers to computer system)
DOC	Designed Operational Capabilities Statement
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DSCP	Defense Support Center Philadelphia
EC	Environment of Care
ECAT	electronic catalog
EDF	Equipment Data File
EMEDS	Expeditionary Medical Support
EML	Expeditionary Medical Logistics
ERAA	Equipment Review and Authorization Activity Board
FAC	functional account code
FDA	Food and Drug Administration
FEDLOG	Federal Logistics Catalog
FSC	federal stock class
FSCM	federal supply code for manufacturers
GCCT	ground critical-care team
GPC	government purchase card
GSA	General Services Administration
HIPPA	Health Insurance Portability and Accountability Act
HMR	Historical Maintenance Record
HQ	headquarters
HQ USAF/SG	Headquarters USAF Surgeon General
HSI	Health Services Inspection
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
JCS	Joint Chiefs of Staff
LP	local purchase

MA	Maintenance Activity
MAV	management assistance visit
MAJCOM	major command
MRDSS	Medical Readiness Decision Support System
MEDLOG	Medical Logistics (refers to computer system)
MEMO	Medical Equipment Management Office
MEPRS	Medical Expense and Performance Reporting System
MER	Medical Equipment Repair
MERC	Medical Equipment Repair Center
MFST	Mobile Field Surgical Team
MISCAP	Mission Capability Statement
MLFC	Medical Logistics Flight Commander
MO	Manpower and Organization
MOA	Minimum Order Amount
MOU	Memorandum of Understanding
MRL	Medical Resource Letter
MTF	Medical Treatment Facility
MTF Commander	Medical Treatment Facility Commander
NCOIC	Noncommissioned Officer in Charge
NEC	National Electric Code
NFPA	National Fire Protection Association
NIIN	national item identification number
NSN	national stock number
OEM	original equipment manufacturer
OI	operating instruction
OPR	office of primary responsibility
PAM	Preventative Medicine/Aerospace Medicine
PCO	primary care optimization
PCRI	post calibration radiation inspection
PHI	protected health information
PM	preventive maintenance
PMI	patient movement item
PPE	personal protective equipment
QA	quality assurance

QAE	quality assurance evaluator
QC	quality control
RMO	Resource Management Office
RSVP	Readiness Skills Verification Program
SAV	staff assistance visit
SMDA	Safe Medical Devices Act
SPEARR	small portable expeditionary aeromedical rapid-response team
TA	table of allowance
TDY	temporary duty
UDR	Universal Medical Repository
UMD	unit manpower document
UMDC	universal medical device code
UMDMS	Universal Medical Device Nomenclature System
UPMR	unit personnel management roster
USAF	United States Air Force
UTC	unit type code
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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