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INTO A NEW MILLENNIA: MEDICAL REQUIREMENTS
FOR THE AIR EXPEDITIONARY FORCES (AEF)

by

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Preface

This paper is a collaborative effort between Major Phil Samples and Major Dean W. Thorson, two U.S. Air Force pharmacists. Our interest in this subject was prompted by experiences we had in evaluating medical readiness and planning through the Air Force Inspection and Safety Center (Major Samples) and special tasking to evaluate contingency hospital preparation (Major Thorson). It has long been a concern that the methods used to prepare and supply AF medical support was costly, inefficient, and did not contribute to a highly prepared and rapidly deployable medical service. With the advent of the new Air Expeditionary Force (AEF) concept, it became evident that changes in medical contingency support planning were necessary to provide a rapidly deployable and sustainable medical force to meet AEF requirements. The problem of maintaining, supplying, and providing adequate personnel to deploy such a force is particularly challenging in light of recent force restructuring and downsizing of many AF medical facilities. Fewer AF hospitals and smaller staffing make difficult the responsibility to provide a readily deployable medical team to support an AEF force while at the same time providing high quality medical care for forces that remain at home. Add to this the greater number of humanitarian assistance efforts that either accompany or are independent of contingency force deployments, and it is easy to see trouble on the horizon.

In researching this topic, we found little written information on expeditionary medical forces. Outside of lessons learned from recent deployments in support of diverse AF operations, much remains to be written regarding organization and deployment of air expeditionary forces and their medical support. We have included some of the current planning for medical force structure in support of AEFs, but much remains uncharted and as yet unidentified. It is our hope that some of the concepts and ideas put forth in this paper will stimulate dialogue and new thinking in future medical contingency planning.

Acknowledgments

We would like to acknowledge the invaluable assistance of a number of individuals who contributed ideas and information relating to this subject. We are particularly appreciative of Lieutenant Colonel Bruce W. Young who's encouragement and assistance in completing this project kept the target in sight and focused. In light of the developing nature of this topic, we would like to offer special thanks to the following: Lieutenant Colonel Patrick G. Kane, Chief, Medical Operations Center, Office of the Surgeon General; Lieutenant Colonel Virginia Wereszynski, HQ USAF/XOPE; Major John Binder, Chief, Strategic Management Branch, HQ ACC; Colonel (Ret) Neil Patterson, Program Analyst, HQ ACC/SGMR for providing us up-to-date information, guidance, and invaluable consultation.

Abstract

Implementation of the Air Expeditionary Force (AEF) fills an urgent need for a force that is structured to respond rapidly anywhere in the world. It is the authors' opinion that the current medical readiness force structure will not support the AEF concept and must therefore be re-engineered. The research presented is a compilation of multiple sources; a complete review of available published materials concerning the AEF, briefings presented during this academic year from the Air Staff, review of primary source documents with the lead command, Air Combat Command (ACC), and multiple interviews with headquarters staff. Additionally, areas of potential savings are explored and lessons learned from previous deployments are identified and discussed.

The current medical force structure is designed to support the deployable medical assets, the Air Transportable Hospital (ATH), the Air Transportable Clinic (ATC), and fixed locations known as contingency hospitals. This paper seeks to use existing literature coupled together with the efforts of the Air Staff and HQ ACC staff to explore possibilities for meeting AEF medical support requirements. Issues and questions are brought out to stimulate additional ideas and challenges the reader to formulate their own plan to address the problems associated with a force structured for rapid deployment with a small footprint. The goal is to explore options and provide input into the development and deployment of medical support for the AEFs.

Chapter 1

Introduction

"An idealist believes that the short run doesn't count. A cynic believes the long run doesn't matter. A realist believes that what is done or left undone in the short run determines the long run". Sidney J. Harris

The United States Air Force stands poised to move into a new century; traditionally a time to look forward and prepare for an exciting future. Optimism for new and better days is tempered with the reality of a world filled with dangers and uncertainties. To assure national security and viability in a such a world requires that U.S. and military leaders plan now to prepare for the challenges that are both anticipated and unanticipated. In Joint Vision 2010, the conceptual template for how the U.S. armed forces will face this unsure future, former Chairman of the Joint Chiefs of Staff, General John M. Shalikashvili, describes how the U.S. Armed Forces will prepare for future war-fighting. In this conceptual template for the 21st century, General Shalikashvili called for all organizations to reduce startup time between deployment and employment.¹ This in a time of reduced military budgets and an increase in military engagement in shaping the world environment. How would the U.S. Air Force respond to the call to prepare for an uncertain future? The answer to prepare to the future was to turn to the lessons of the past.

Facing a greater need for rapidly deploying forces while at the same time dealing decreasing budgets and personnel, Air Force Chief of Staff Michael Ryan announced a

fundamental change in organizational structure. On August 6, 1998, General Ryan announced the formation of ten Air Expeditionary Forces (AEF) designed to close the gap by forming rapid deployment forces organized to quickly respond to worldwide contingencies.² The goal was to maintain a deployment ready force that was sustainable from the standpoint of personnel operations tempo and provide an improved quality of life for Air Force personnel. The transition to an AEF concept requires a basic change in mindset and in some cases organizational restructure to adequately support AEFs as they prepare and deploy in response to U.S. interests. Regarding AF Medical Service (AFMS), the question must be asked, is the current medical readiness force structure adequate to support the planned AEFs? While medical personnel have successfully met the needs of deploying forces in the past, a leaner, right-sized medical system may be strained in supporting new deployment requirements. Clearly, an appropriate medical deployment force structure is necessary to meet the needs of a rapidly deploying AEF. It is the position of this paper that current medical deployment process will not adequately support the conceptualized AEF. To that end, this paper reviews efforts within the AFMS to support the AEF and proposes ideas for successfully meeting AEF medical support requirements.

Notes

¹ Department of Defense, *Joint Vision 2010- America's Military: Preparing for Tomorrow*. Office of the Chairman of the Joint Chiefs of Staff.

² Air Force News Service, *Air Forces Readies Itself for the 21st Century*, 6 Aug 1998 reported by Senior Master Sgt. Jim Katzaman

Chapter 2

AEF Background

"Man is a history-making creature who can neither repeat his past nor leave it behind." W.H. Auden from The Dyer's Hand

The United States enters a new millennia as the preeminent world military power. Gone for now is the superpower confrontation that characterized most of the latter half of the century. World challenges now take the form of transnational threats such as terrorism, drug trafficking, threats of weapons of mass destruction (WMD), and protecting critical infrastructures. Additionally, the military must prepare to fight and win the nation's wars on a spectrum from smaller-scale contingencies (SSC) as a part of our alliance obligations to major theater war (MTW). As identified in the 1998 National Security Strategy for a New Century (NSS):

The U.S. military plays an essential role in building coalitions and shaping the international environment in ways that protect and promote U.S. interests. Through overseas presence and peacetime engagement activities such as defense cooperation, security assistance, and training and exercises with allies and friends, our armed forces help deter aggression and coercion, promote regional stability, prevent and reduce conflicts and threats, and serve as role models for militaries in emerging democracies. These important efforts engage every component of the Total Force: Active, Reserve, National Guard, and civilian.¹

The 1998 NSS further states that in an uncertain world we must be able to "maintain a force structure and deployment posture that enable us to successfully conduct military

operations across the spectrum of conflict, often in theaters distant from the United States" and must respond rapidly to crises.²

Because of the changing world environment and the obligation to prepare now for an uncertain future, the National Military Strategy (NMS) outlines strategic concepts in organizing, training and equipping the force of the future. Two key strategic concepts are *Strategic Agility* or "the timely concentration, employment, and sustainment of U.S. military power anywhere at our own initiative, at a speed and tempo that our adversaries cannot match; and *Power Projection* or "the ability to rapidly and effectively deploy and sustain U.S. forces in and from multiple locations".³ These strategic concepts require leaders to begin now to organize and shape a force of such capability.

The changing role of the military from a garrison force prepared to fight a major superpower conflict to a rapidly deployable force actively engaged in shaping the world environment has been superimposed upon a force that is vastly smaller in size. This has resulted in higher operations tempos and greater strain on existing forces to meet obligations at home and abroad. Innovative leaders began to explore a better organizational concept that would enable the Air Force to rapidly and efficiently project airpower when required. In the fall of 1994 and soon after assuming command of 9th AF and air component commander of USCENTCOM, Lt General John P. Jumper began to circulate an idea of an air expeditionary force throughout his command and ACC. His previous assignment as Special Assistant to the Air Force Chief of Staff for Roles and Missions had involved him in redefining the Air Force in light of new post-cold war challenges. While dealing with Operations NORTHERN WATCH and SOUTHERN WATCH in enforcing the no-fly zones of Iraq, he was faced with the challenge of

continuing the mission in the face of shrinking air assets. His thinking formed the basis of the AEF concept, which he presented to CINCCENTCOM as a solution to the problem. The Chairman of the Joint Chiefs endorsed the plan and requested ACC Commander Gen Ralston to deploy an AEF to the Gulf. On October 28, 1995, AEF I deployed a force of 576 people and began flying the first sorties within 12 hours of arrival. By the time they returned on 18 Dec 1995, they had flown 673 sorties. In commenting on the success of this mission, Gen Ralston said:

“As we look to the future, we can expect to see the Air Expeditionary Force concept used more frequently because it is economical, practical and it embraces any mix of aircraft. Because we can project sustainable combat capable air power so rapidly, we can reduce the number of people we have deployed. In turn, we can reduce our overall operations tempo, and we reduce how much we spend. The AEF is more cost effective and, from the theater commander's perspective it's a responsive, lethal package that gives almost immediate results.”⁴

In April 1996 AEF II was deployed to the Kingdom of Jordan with 1,150 individuals including 9 medical personnel, returning June 28, 1996 after flying 918 sorties. AEF III was called and deployed to Qatar on June 24, 1996 with 1,200 personnel and flew 1,323 sorties before returning August 20 of that same year. CENTAF requested two more AEFs in 1997 in response to continuing Iraqi provocation and were deployed to Bahrain. These deployments proved the value of an expeditionary force prepared to quickly answer world challenges, and the lessons were not lost on Air Force Leadership. In the Winter 1996 Airpower Journal, Brig Gen William R. Looney, III defined the mission, capabilities, and roles of the AEF. He described the AEF as an "airpower package (usually between 30 to 40 aircraft) that national command authorities may deploy to defuse a developing crisis situation, to quickly increase a theater's air power capability, or to maintain a constant theater airpower capability."⁵ According to Brig Gen Looney, the

AEF's mission is to give regional commanders in chief (CINC) rapid, responsive, and reliable airpower capabilities and options that meet specific theater needs.⁶ He further stated that AEFs are configured with basic capabilities inherent in strike packages. In his vision of the AEF, personnel support for a typical fighter package would require approximately 1000 individuals, increasing to 1,175 with the inclusion of tanker support. AEFs would be tailored to meet the operational needs of the CINC, however, and force size would vary accordingly.

A most significant step occurred on 4 August 1998, when AF Chief of Staff General Michael E. Ryan unveiled details for the move to an expeditionary aerospace force. Under the new force concept, "...AEFs would be on call or deployed up to 90 days at a time by Jan. 1, 2000. Elements would come from lead bases of "shooters" of fighter wings, supported by people and equipment for other bases both stateside and overseas."⁷



Figure 1 General Michael Ryan and Acting Secretary of the Air Force F. Whitten Peters announcing the formation of ten Air Force Expeditionary Forces

The basic organization the Air Force would adopt Gen Ryan explained would be ten air expeditionary forces with two on call at any given time to respond to contingency of humanitarian hot spots around the world. The two AEFs would be ready for immediate

call up over a 90 day window followed by a down period for reconstitution and a 15 month rotation cycle. Figure 2 on page 8 illustrates the basic AEF employment schedule as conceived at the time of presentation. Acting Secretary of the Air Force F. Whitten Peters explained that the new organization will bring greater stability to the lives of airmen with up to a year or more to prepare for rapid deployment with a reduced tempo for those who remain behind.

In a keynote address delivered to the National Air Force Association Convention in Washington, D.C. on 14 September 1998, Gen Ryan further explained the new AEF concept. He commented that the Air Force has been supporting an average of six to seven pop-up crises each year with an average of 25 USAF aircraft deployed to support each one of them. Additionally, the Air Force averaged approximately 250 aircraft deployed at any one time responding to protracted contingencies. "As we look back" he stated, "two of our AEFs could have provided sufficient forces to handle all of the Air Force commitments--both pop-up and protracted."⁸

Life Cycle of an AEF

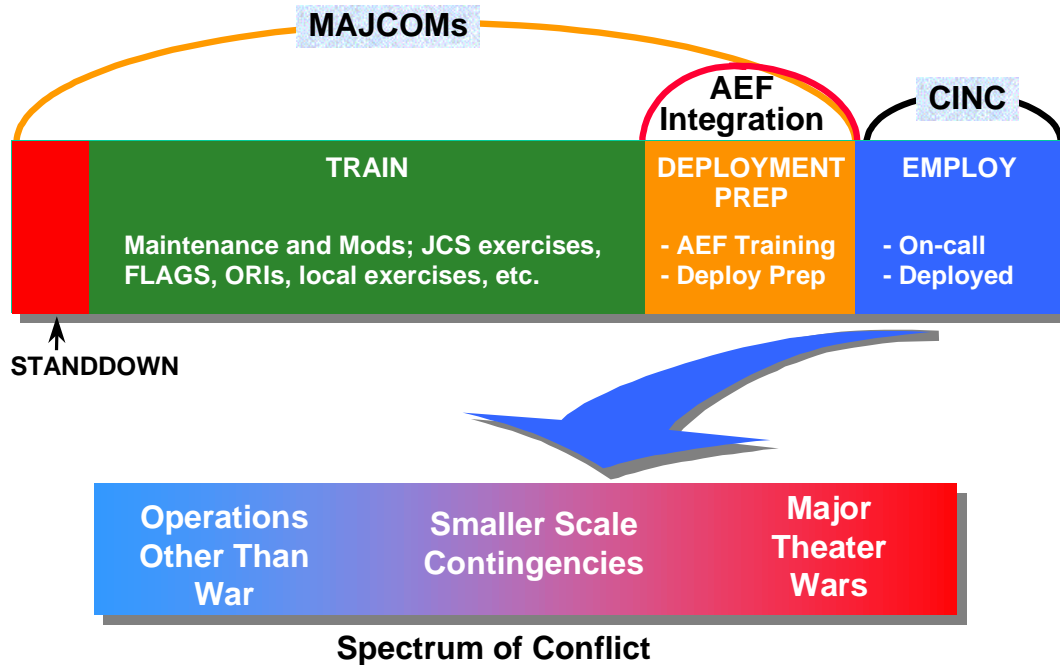


Figure 2 AEF Employment Schedule

It is clear that with the expeditionary nature of aerospace force employment, organizational changes are required to enable those forces with the agility and support necessary to respond to uncertain threats. While much remains to be determined regarding the structure and deployment of an AEF, concerns that fundamental changes relating to medical readiness plans and structure were necessary to support this deploying force have prompted leaders to re-evaluate medical plans (see page 21). Medical readiness plans must reflect this new reality and prepare now to support expeditionary aerospace forces. Some fundamental questions must be answered such as the following:

- How will medical deployment be organized to support an AEF deployment cycle?

- What numbers and medical specialties are required at various levels of deployment?
- How will medical forces be employed during the training cycle to assure medical readiness?
- Where will deploying medical forces come from and how will it affect services offered at the local base?
- How will medical equipment and supplies be managed to assure adequate care may be rendered in a deployment situation?

Much work is ongoing at this time to prepare the AF Medical Service to support the AEF concept. What follows is a discussion of experience and lessons learned from recent medical deployment, current efforts underway to reshape medical deployment forces, and issues that remain on the horizon.

Notes

¹ *A National Security Strategy for a New Century, October 1998*, page 12

² *ibid*, page 26

³ *National Military Strategy of the United States- Shape, Respond, Prepare Now: A Military Strategy for a New Era, 1997*. Pages 19,20.

⁴ Davis, Richard G. *Immediate Reach, Immediate Power: The Air Expeditionary Force and American Power Projection in the Post Cold War Era*. Washington, Air Force History and Museums Program, 1998. page 22-23

⁵ Looney, William R., III. *The Air Expeditionary Force*. *Airpower Journal*, Winter 1996. page 6

⁶ *ibid*

⁷ Air Force News Service, *Air Forces Readies Itself for the 21st Century*, 6 Aug 1998 reported by Senior Master Sgt. Jim Katzaman

⁸ *Expeditionary Aerospace Force for America*, Keynote address to the National Air Force Association Convention, Washington, D.C. by Gen Michael E. Ryan, U.S. Air Force chief of staff.

Chapter 3

Recent Military Medical Deployment Experience and Lessons Learned

"Progress, far from consisting of change, depends on retentiveness....Those who cannot remember the past are condemned to repeat it." George Santayana, from The Life of Reason

Planning for the future will always be closely tied to the experiences of the past. This is particularly true in the case of planning for military deployments. Moving a military force to engage a waiting enemy is a complex and intricate process requiring planning and forethought to prevent mistakes that could allow an enemy to gain advantage or disrupt incoming forces. Without learning from the lessons of the past, mistakes may be made that cost time, lives, and military efficiency. Deploying of medical support forces likewise requires careful planning if those medical assets are to function effectively and perform their role in saving life and limb. Plans must include airlift into theater, logistics, and bare base support. It is also critical that past experience be considered as plans are made for future medical deployment in support of either contingency or humanitarian relief. The following is a review of documented experience relating to recent medical force deployment, including discussion of things that worked well and mistakes that should be avoided by effective planning and foresight.

Persian Gulf

Perhaps the most comprehensive document on the military medical deployment to Southwest Asia (SWA) was the report¹ generated by the chief of plans for HQ USCENTAF, then Lieutenant Colonel Bob Ferguson. During DESERT SHIELD/DESERT STORM (DS/DS) the AF deployed 14 Air Transportable Hospitals to SWA.² Leadership and old-fashioned ingenuity (the ability to solve and work around problems when leadership was lacking) often made the difference.

Besides leadership there is another keyword to describe building a bare base theater medical system, **work-around**. Just as we saw the very best in leadership we also saw, sadly to say, the poorest. Particularly, those who could not adapt and be flexible to challenging circumstances as leaders had a difficult time in the desert, and personnel around them were affected. This attitude of adaptation and flexibility meant constantly doing work-arounds. Work-arounds meant scrounging, modifying concepts and equipment (where possible), re-examining how we did things in CONUS exercises, and doing what we could to meet mission requirements with less of something different. It meant leadership taking a fresh approach in their subordinates. It meant sleeping on a hangar floor upon arrival in the first couple of weeks of the operation, pitching your own billeting tents, receiving ASF base operating support (BOS) from the Marine Corps, using a litter and a sawhorse for a field bed, using vehicles other than ambulances for mass casualty response, ATH personnel volunteering to run the MWR program, doing hair cuts or sponsoring bed down choir, mental health officers being proactive doing stress management and suicide prevention workshops and making their office the flightline or at Security Police (SP) guardposts, MAC AE [*Military Airlift Command Aeromedical Evacuation*] medics leading a Christmas play, and on and on – the list is seemingly endless.³ [*emphasis added*]

Fortunately, pre-positioned assets throughout the theater gave a critical jump-start to initiate medical operations quickly. Included in these pre-positioned assets were contingency hospitals, litters, shelter kits, ATH, am-busses, and ambulances. Perhaps one of the most annoying problems was the logistics issue. One problem all three services experienced was managing their own medical supply, by November, 1990, the Army Component Command (ARCENT) was designated as the single integrated medical

logistics manager for the theater.⁴ Additionally, in DS/DS short lived drug stocks (including chemical/biological vaccines) were available in extremely limited quantities or only in test quantities. In the report of July 1991 the General Accounting Office suggested the complex rules and regulations governing purchase and storage of dated items contributed to problems in maintaining up-to-date supplies and may require legislative remedy.⁵

For the most part, these problems occurred even in the face of a long ramp-up time that was perhaps unique in the Gulf War experience. In some cases, however, little time was available to prepare for medical deployment, such as in response to the embassy bombing in Nairobi, Kenya.

JTF Resolute Response – Nairobi, Kenya

On 7 August 1998 a 12 person Medical Assessment Team (MAT) was deployed from the 4404th Medical Group, Prince Sultan Air Base in response to the embassy bombing in Nairobi, Kenya. Due to the suddenness and surprise of the attack on the US Embassy the MAT moved from the Alert Phase to Employed Phase in one day. It must be considered that had the deploying unit had more time to prepare several of these issues might have been resolved in the planning phase. The following are six major issues and lessons learned from this deployment as presented in the after action report (AAR).

Issue: Early in the response to this deployment there were issues, which may have been avoided with proper intelligence and cultural briefings, had time permitted. Specifically, ignoring proper protocol and local customs, and insulting host-nation medical staffs who were providing aid to injured American personnel. This resulted in a critical letter from the US Ambassador to the US President. **Recommendation:** A medical on-scene commander should be appointed immediately upon arrival at deployment locations. All subsequent medical forces deploying to the area should seek out and report to the medical commander for necessary instructions

and briefings on the situation, and any local formalities and conventions that may affect operations.

Issue: As with any deployment the health of the team is paramount. During this deployment some members of the deployed team chose not to consume the MREs and bottled water available on the deployment. It was assumed since Nairobi is a metropolitan city, sanitation standards were high. Through the course of the deployment, MREs were stored at USAID and were often inaccessible to team members because of travel restrictions. Later, MREs ran short and were unavailable. Most team members experienced gastrointestinal illness, nausea, and diarrhea from consuming local food and water.⁶ **Recommendation 1:** Public Health Team should have immediately available and accessible all data on deployment locations in order to prepare and present complete medical intelligence briefings to deploying personnel. They should also inform the Medical Control Center and the Battlestaff of immediately pertinent issues such as sanitation standards, water potability, diseases, etc. Assumptions should not be made that because individuals “are medical”, they “already know this stuff”. **Recommendation 2:** Deployed command staff should place emphasis on consuming MREs and bottled water during deployments to suspect areas. Sufficient quantities of MREs and bottled water should be deployed with team members, and should be readily accessible at all times. Immediate re-supply should be requested when supplies begin to run short.

Issue: Water test kits were available on the deployment. Public Health Team instructed and trained the two flight surgeons on proper use of the kits prior to deployment. The team members qualified on their operation, however, did not utilize the kits. **Recommendation:** All available equipment provided to protect the health and safety of deploying personnel should be utilized. The number of personnel familiar with the operation and use of water test kits should be increased across AFSCs through home-station training prior to deployment. This could be included as a Medical Readiness training sub-area under the subject of Field Sanitation & Hygiene.

Issue: All members deployed were ill prepared regarding weather attire. The 4404th Wing did provide warm clothing at the first available re-supply. **Recommendation:** Properly prepared and presented medical intelligence pre-deployment briefings should also include pertinent information on geography and weather to be expected in deployment locations.

Issue: Due to the expedient nature of the deployment several members were inadequately prepared to meet the financial responsibilities, i.e., credit cards, personal checks or cash. Pay advance was not accessible until the second week of the mission. **Recommendation:** Prior to

departure, deploying personnel should be reminded to bring adequate financial resources on deployments. With the deployment of a finance representative, pay advances should have been available earlier to deployed members.

Issue: Communication with home station and unit was not available despite the deployment of satellite communications equipment. Hand-held radios were not available for communication between deployed teams, individual members at workstations, and with command staff. This was primarily accomplished through routine meetings that were somewhat hampered by transportation availability. **Recommendation:** A pre-deployment handbook should be developed along with appropriate checklists to ensure all pre-planning phases of an operation are addressed prior to departure. This handbook should be kept in the Medical Control Center and referenced by command and control personnel during the initial alert phases of operations. Deploying members should be provided with all necessary instructions and information that may be required away from home station. This information should include such seemingly simple and often overlooked items as methods and instructions for basic communication capabilities with home station, e.g. commercial telephone numbers for home station and calling instructions for use when sophisticated systems fail or are unavailable. Cellular phones and/or a limited number of hand-held radios with back-up batteries should be provided to deploying teams.⁷

Although not part of the official observations and recommendations an additional issue was noted in the body of the AAR which is noteworthy. Some of the donated medical supplies arriving in country were found to be past the labeled expiration date. Due to local customs, medical supplies that are past expiration are strictly taboo and are not used in the treatment of patients by the Kenyans under any circumstances. Culturally, it was considered a direct insult to Kenyans to receive such materials in shipments to their country. In order to avoid possible embarrassment and political ramifications, these supplies had to be quietly removed from inventories and shipped from the country.⁸ This problem can and should be alleviated by close coordination of the medical staff, pharmacy staff and logistics support prior to deployment. The issue of out-dated medical supplies will also be addressed in the section below, Forward Deployed Medical Assets.

Experience with Forward Deployed Medical Assets

Forward-deployed medical assets have been both a blessing and a nuisance. As mentioned above during DS/DS these assets made supplies quickly available when logistics support was unreliable. However, from a logistics and budget perspective, these assets have been extremely difficult to sustain as seen from examples below. During a recent USAF/IG management level review (MLR) the inspection team observed confusion from several MAJCOM/LG staffs as to the funding for medical pre-positioned assets. It was the staff's belief that the cost for maintaining these assets should come from medical funds and not the fund associated with WRM assets normally allocated to the MAJCOM. This misunderstanding on occasion created re-supply problems for those managing the pre-positioned asset. Budgetary issues became even more confusing when an asset was in one MAJCOM AOR but functionally controlled by CENTAF. Although beyond the scope of this paper budgetary issues can significantly effect the operations of these assets. Specific examples of this problem were observed during the MLR in SWA. While inspecting pre-positioned ATHs in one area of SWA it was noted four of the five ATHs were in various stages of readiness. Of those four, all were missing a valve required for operating respirator equipment. Without this one critical piece of equipment, seriously injured or surgical patients could not be treated at these ATHs. Interestingly, this valve had an estimated cost of just \$1,000. The contractor responsible for maintaining the ATHs had identified this shortfall but was unable to receive funding for more than a year. Another issue identified while inspecting these assets was the dollar volume of dated items, which were being lost each year. Each ATH has approximately \$300,000 of dated item inventory and the average life of these items is 3 years once in place (actually many medications are shorter and surgical supplies are longer) then there

is a projected annual lose of \$500,000 for these five ATHs. This dollar figure increases with contingency hospitals (CONHOSP) due to the increased volume of dated items in these pre-positioned assets.

Another problem that was identified with these SWA pre-positioned assets was the ability to deploy them within theater. For example, after the bombing of the Kobar Towers a tasking was sent to deploy an ATH from Thumrait, Oman to Prince Sultan Air Base (PSAB) in Saudi Arabia as the closest available medical asset. Unfortunately, difficulty in moving the equipment through a border necessitated that an ATH from Mountain Home AFB be tasked instead. The Mountain Home ATH arrived in theater before the one already there could clear customs at the border of a neighboring state. During relative peace this was not an issue for our airlift capability however had this occurred during hostilities the outcome might have been significantly different.

Finally, issues related to the table of allowances (TA) could and do affect the potential deployability and functionality of these assets. Decisions made regarding equipment or supplies must be considered in concert with functional experts to prevent incompatibility problems. An example of such incompatibilities would be a recent situation where a four-inch centrifuge was substituted into the TA without consideration of the 5-inch tubes that were supplied as part of the TA. A functional expert (in this case, a laboratory officer) was not consulted, but rather, the decision was made by an individual without training in that area. This decision resulted in an equipment/supply incompatibility that would have made laboratory blood analysis impossible--a situation that would have life-threatening implications. It is critical that functional experts be

consulted before decisions are made relating to equipping and sustainment of deployable medical assets to prevent equipment/supply incompatibilities.

Notes

¹ Ferguson, Bob, Operation Desert Shield and Storm: Air Force Medical Plans and Operations, 25 Nov 91

² Ibid.

³ Ibid., p.5-6

⁴ Conduct of the Persian Gulf Conflict – An Interim Report to Congress, Jul 91, p. 7.4

⁵ Ibid., p7.7

⁶ Ibid.

⁷ Scott, Courtney D. After Action Report – Joint Task Force Resolute Response, 17 Sep 98.

⁸ Ibid.

Chapter 4

Medical Support for the AEF

"History never looks like history when you are living through it. It always looks confusing and messy and it always feels uncomfortable." John W. Gardner, No Easy Victories

Current Methods

Air Transportable Hospital (ATH)

The following is a brief description of the capability and size of an ATH. The hospitals are air conditioned and heated and can be phased in as 14-bed, 25-bed, and 50-beds. Complete with three ISO (international standards organization) shelters and three ambulances, they weigh about 100 short-tons (approximately 200,000 pounds) and can be airlifted anywhere in the world in hours. The ATH has two-thirds echelon capability with general and orthopedic surgery, dental, bioenvironmental engineering, environmental health, combat stress capabilities, and a full complement of ancillary support services (lab, pharmacy, and radiology). Additionally, the ATH come with thirty days of supplies. An ATH can routinely provide care for 3000 to 5000 personnel at a deployed location.¹

Personnel Management

When an ATH deploys under the current system, personnel tasking(s) are made through the responsible MAJCOM. MAJCOM/SG must take into consideration the effects of deploying a large number of personnel particularly from smaller medical treatment facilities (MTF). For example, if the ATH from a small facility (less than 10 beds) were to deploy with all its Unit Type Code (UTC) tasking, a small MTF such as Minot AFB could deploy 119/365 or 33% of their entire personnel. Although Tricare contracts provide minimal support for physician appointments, without reserve backfill, this type of deployment would severely degrade the ability of the remaining staff to effectively care for local personnel. In consideration of this, MAJCOMs generally spread personnel tasking(s) throughout the command to lessen the impact on any one MTF. Although not a formalized process, spreading personnel tasking throughout a command and among other commands is already an order of business for the Air Force Medical Service (AFMS). In this way, the AFMS has in essence already begun to function in a method similar to the proposed AEF model. A major drawback is that commanders have a daunting task to build unit cohesion in a group of individuals who know little of each other or who may have never worked together prior to deployment.

Logistical Support

Logistical support for an ATH is generally good throughout the AFMS. Equipment and supplies are properly palletized and for the most part they are routinely exercised. There are however several issues which taking a different approach to the management of the deployable asset could solve. First, management of dated items in an ATH is time consuming and wasteful. Consider each ATH within CONUS (approximately 30) has

about \$300,000 in dated items. If this inventory expires at the rate of one-third every year that would extrapolate to \$3 million annually for the USAF. Another issue related to dated items is the inability of the local facility to use these items in a quantity which would allow for rotation of these items. Second, management of an ATH is a labor-intensive process often shifting existing personnel from their primary duties to additional duties related to the ATH.

Deployment

Currently a 10-bed ATH requires one C-17 (or two C-141s) of lift.² During a contingency lift capability is limited. However, for military operations other than war (MOOTW) where medical assets are required, lift is usually not an issue. Although not mentioned previously there are Air Transportable Clinics (ATC). However, the ATC is generally too small, providing only sick-call services.

Potential Problems and shortcomings

As noted earlier in this paper the medical service has a fine history of providing medical care in support of the mission given. These deployments have not been without incident or troubles. The talent the AFMS brings to bear on these issues is a testament to talented leaders and planners we have had and those working the issues now. The following is a simple list of issues, which stem from the current system:

1. How will personnel readiness taskings be apportioned?
2. Will readiness requirements be tied to a position or a person?
3. Is our current system for updating the TA valid?
4. How do we infuse new technologies and therapies into a relatively inflexible system?

5. Could a centrally managed system similar to pre-positioned assets work in CONUS?
6. Could the USAF let contracts that would allow a vendor or vendors to manage dated items?
7. Is lift adequate to support multiple taskings?
8. Is Aeromedical Evacuation (AE) adequate to handle pop-up deployments?

The remainder of this paper will address the AEF concept and how that concept may help answer many of these questions.

Efforts to Refocus Medical Readiness/New Ideas

HQ Air Combat Command/Surgeon General's Office (ACC/SG) is in process of developing Concept of Operations (CONOPS) for Expeditionary Medical Support (EMEDS) and Air Force Theater Hospitalization (AFTH). This draft CONOPS describes the manner in which the Air Force Medical Service will support the AEF taking into consideration all types of deployment scenarios: humanitarian assistance (HA) civil disaster, and military contingencies up to major theater war (MTW).³ EMEDS specifically is designated as the medical force package designed to sustain and support the AEF package. EMEDS has been divided into deployment increments depending on the needs of the operations and are listed below:

AFTH Increment One (EMEDS) - Deployment Phase

Module 1. The Medical Component of the AEF Advanced Echelon (ADVON) team. Deploys with the initial AEF team. Comprised of two personnel—Flight Surgeon and Independent Duty Medical Technician (IDMT). Personnel will deploy only with professional gear. This module will provide limited aerospace medicine support, primary care, initial site survey, and preventive medicine planning for water, food, and sewage. It will coordinate with civil engineering and services squadrons to ensure

preventive medicine concepts are included in site bed-down. *It is essential for force protection that the medical ADVON team be on the first aircraft.*

Module 2. Mobile Field Surgical Team (MFST). The five person surgical module of EMEDS will arrive with the next increment of personnel. Initial Operational Capability (IOC) will be within 2 hours following arrival of the EMEDS surgical package at the deployed location. The module will provide emergency and surgical trauma care for AEF first deployers during the high-risk period of base build up. Shelters of opportunity will be employed pending arrival of Module 3. Personnel will deploy with man-portable surgical packs. *This module must be in-place within the first day.*

Module 3. Remaining 17 EMEDS Personnel and Three Pallets of Equipment. Will arrive within 24 hours of the surgical module. Full operational capability (FOC) for EMEDS will be within 12 hours after arrival. As a minimum, the following base support is needed during this period (or as soon as possible): electrical/ground power equipment, communications, fuel and potable water delivery, transportation, security, and sanitary waste system. Generators and ECUs must be provided by base operating support (BOS).⁴

These modules are the first medical assets to arrive with a deploying force with the mission of providing 24-hour sick call and emergency medical care. They also bring the first elements of medical command and control, preventive medicine, trauma resuscitation and stabilization, limited surgery, primary care, aeromedical evacuation coordination, aerospace medicine, urgent care, dental, and limited ancillary services. EMEDS provides limited holding capability of less than 23 hours. *Timely aeromedical evacuation support is critical to mission success.*⁵ The following assumptions are made for EMEDS operations⁶:

- ◆ The 24-person EMEDS force package is capable of sustaining 500-2000 personnel for 7 days in an austere environment without re-supply.
- ◆ Is capable of 10 major trauma surgeries or 20 non-operative trauma resuscitations (without re-supply) in one 24-hour period.
- ◆ Populations at risk are for the AEF only; evacuation distances, host nation support and joint service requirements will drive the AEF Health Services (EMED) lay-down.

- ◆ EMEDS is designed to confront a low conventional and NBC threat—BW/CW supplies will be sufficiently available in the deployed location but will not be considered part of EMEDS resources.
- ◆ Adequate airlift is available.
- ◆ The aeromedical evacuation (AE) policy is 1 day with urgent aeromedical evacuation available within 12 hours from time of request-unless operational issues drive short-term deviation.
- ◆ Deployed medical forces cannot depend on host-nation support.
- ◆ Expeditionary Combat Support is essential for bed-down. It includes (but is not limited to): electrical/ground power equipment, environmental control units, communications, fuel, potable water delivery, transportation, living quarters for medical personnel, and medical waste disposal.
- ◆ Must train with 10-bed increment as a unified team annually.

These initial EMEDS packages may be augmented to increase capability and bed capacity with the 2nd increment described as EMEDS+10. This increment would support 2000-3000 worldwide-qualified personnel with 10 inpatient beds and 72 hour holding capacity. The 3rd increment, described as EMEDS+25 is designed to support the deployment of 3000-5000 worldwide qualified personnel with 25 inpatient beds and holding capacity to meet the needs of local evacuation policies. EMEDS + 25 will provide the core infrastructure for specialty UTC's (i.e., critical care, gynecology, ENT, neurosurgery, oral surgery, ophthalmology, thoracic/vascular surgery, and urology; mental health triage and combat stress management). The core infrastructure will provide additional ancillary support, medical equipment maintenance and facility management.⁷ Table 1 on the following page represents the estimated BOS requirements and Table 2 represents the anticipated personnel package.

ESTIMATED SUPPORT REQUIREMENTS (DRAFT)

Table 1 EMEDS Base Operating Support (BOS) Requirements

ITEM	EMEDS Force Package	10-BED AFTH (II)	25-BED AFTH (III)	50-BED AFTH	114-BED AFTH	500-BED AFTH (Fixed)
Site Prep	15,000 ft ²	26,000 ft ²	40,000 ft ²	50,000 ft²	TBD	TBD
Billeting	22 people	60 people	100 people	128 people		
Latrine/ Showers	26 People	70 people	125 people	178 people		
Food Service						
Regular	78 meals/day	141 meals/day	285 meals/day	453 meals/day		
Liquid	3 meals/day	9 meals/day	12 meals/day	20 meals/day		
Laundry	1,000 lb/wk	3,000 lb/wk	6,000 lb/wk	9000 lb/wk		
Power	100 kW BOS	100 kW	200 kW	300 kW		
ITEM	EMEDS Force Package	10-BED AFTH (II)	25-BED AFTH (III)	50-BED AFTH	114-BED AFTH	500-BED AFTH (Fixed)
Fuel	BOS					
Diesel	0	360 gal/day	720 gal/day	1080 gal/day		
Water (potable)	500 gal/day	2,000 gal/day	3,500 gal/day	5,500 gal/day		
Ice	==	85 lb/day	150 lb/day	300 lb/day		
Waste						
Liquid	700 gal/day	1800 gal/day	3150 gal/day	4950 gal/day		
Solid	2300 lb/day	6000 lb/day	11600 lb/day	18500 lb/day		
Comm						
Phones	6 4 cell, 2 land	8	10	16		
Satellite	1	1	1	1		
LMR	6	TBD	TBD			
STU III	0	1	1	1		
Oxygen (LOX)	15 gal/day	40 gal/day	60 gal/day	80 gal/day		
Pallets	3	9	TBD	TBD		
Equipment Movement	6k forklift	13k forklift, flatbed truck	13k forklift, flatbed truck	13k forklift, flatbed truck		

Source: Draft Concept of Operations for Expeditionary Medical Support (EMEDS) and Air Force Theater Hospitalization (AFTH), p 17.

ESTIMATED EMEDS FORCE PACKAGE (DRAFT)

Table 2 EMEDS Force Package (1st to 3rd Increments)

AFSC	Rank	Title	EMEDS PAR 500-2000	EMEDS PAR (2000 to Delta)	+10 3000 Total	EMEDS PAR (3000 to Delta)	+25 5000 Total	Auth Subs	Substitute Title/Notes
04XXX	O-5	Commander	1	0	1	0	1		- Corps Neutral. No less than 0-5. <i>Note:</i> If RAM trained, can decide that SME RAM not required
4XXXX		1 st Sergeant	0	0	0	1	1		
045S3	O-4	General Surgeon	1	0	1	1	2		
045B3	O-4	Orthopedic Surgeon	1	0	1	0	1		
045A3	O-4	Anesthesiologist	0	0	0	1	1	046A3	Nurse Anesthetist
046M3	O-3	CRNA	1	0	1	0	1		
044E3A	O-4	ER Physician	1	0	1	0	1	044F3	Family Practice Physician MFST Trained
046S3	O-3	OR Nurses	1	0	1	0	1		
046S3	O-4	OR Nurse	0	0	0	1	1		
044M3	O-4	Internist	1	0	1	0	1		
048A3	O-5	Aerospace Medicine	1	0	1	0	1		
048F3	O-4	Aerospace Medicine (Family Practice)	1	1	2	0	2		
044F3	O-4	Family Practice	0	0	0	2	2		Sub may be Physician Assistant.
046N3	O-4	Clinical Nurse	0	0	0	1	1		
046N3	O-3	Clinical Nurse	1	3	4	4	8		
046N3E	O-3	Critical Care Nurse	1	1	2	0	2		
4H071		Respiratory Technician	1	0	1	0	1	4N071	Medical Technician
4F071		Flight Medicine Technician	2	0	2	0	2		
4F051		Flight Medicine Technician	2	0	2	0	2	4N051	Medical Technician
047G3A	O-4	General Dentist	1	0	1	1	2	047G3C 047G3	
4Y071		Dental Tech	0	0	0	1	1		
4N151		OR Tech	0	1	1	2	3		
4N031		Medical Technician	0	3	3	0	3		
4N051		Medical Technician	2	5	7	2	9		

AFSC	Rank	Title	EMEDS PAR 500-2000	EMEDS PAR (2000 to Delta	+10 3000) Total	EMEDS PAR (3000 to Delta	+25 5000) Total	Auth Subs	Substitute Title/Notes
4N071		Medical Technician	0	1	1	3	4		
42S3	0-4	Mental Health Officer	0	1	1	0	1	4XXXX	Alternate will be a psychologist.
4XX7X		Mental Health Tech	0	0	0	1	1		
4A171		Medical Logistics	1	1	2	1	3		
4N071- 496		IDMT	1	1	2	0	2	4F071- 496	
043E3A	0-3	Public Health Officer	0	1	1	0	1	043E3A	Public Health Officer
4E071		Public Health Tech	1	0	1	1	2		
4B071		Bioenvir- onmental Tech	1	0	1	1	2		
43E3A	0-3	Bioenvir- onmental Officer	0	1	1	0	1		
43P3	0-3	Pharmacy Officer	0	0	0	1	1		
4P071		Pharmacy Technician	0	1	1	0	1		
4R071		Radiology Technician	0	1	1	1	2		
4T071		Lab Technician	0	1	1	1	2		
043T3A	0-3	Lab Officer	0	0	0	1	1		
4A271		BMET	0	1	1	1	2		
041A4	0-3	MSC (IM/IT)	1	0	1	0	1		Sub will be core neutral.
041A4	0-4	MSC	0	0	0	1	1		
4A051		Health Services Admin Technician	0	1	1	1	2		
4A071		Health Services Admin Technician	0	1	1	2	3		
V4A07 1		Health Services Admin Tech	0	1	1	0	1		
4D051		Dietary Technician	0	0	0	1	1		
42B3	0-3	Physical Therapy Officer	0	0	0	1	1		
TOTALS			24	27	51	35	86		

Source: Draft Concept of Operations for Expeditionary Medical Support (EMEDS) and Air Force Theater Hospitalization (AFTH), p 18,19.

Proposals for a New Approach to Medical Readiness

Personnel Management

To better align deployment of medical personnel along the AEF concept, it is proposed that as the 10 AEFs are organized and assigned to local units, that HQ SG review and establish medical force packages required to support the planned AEF personnel package. Each EMEDS with its subsequent augmentation packages identifies individual AFSCs required to establish required medical support and sustainment of the combat force. Once the positions have been identified, medical personnel requirements should then be divided to MAJCOM medical staffs based upon available medical facilities and staff availability. MAJCOMs will identify by position number those AFSCs that will be permanently assigned to a specific AEF. Local commanders may assign qualified individuals to occupy that specific position number. It may also be advisable to assign where possible secondary positions of personnel who will deploy in the event of incapacity of the primary designee.

Individuals so assigned should participate in assigned AEF exercises during periods when the AEF is preparing for its time "on the bubble" and exercise EMEDS deployment during the preparation period. Presently, fund allocations to support medical red flag training performed either at the local facility or centrally at Sheppard AFB would be redirected to training individuals who are preparing to begin a 90-day deployment window. This training should be realistic and include complete training in setting up EMEDS and its associated assemblages. Designated EMEDS commanders should be responsible for such training and assure that all individuals are qualified to perform duties prior to deployment. Once individuals are assigned and trained for an upcoming

deployment, they should not be moved from the deployable position except by approval of the EMEDS commander. Supporting medical reserve units should plan annual training around such exercises and also participate in EMEDS training where necessary. Individual mobilization augmentee (IMA) reservists who provide backfill support to the local medical treatment facility may be tasked to perform annual training during periods when MTF (medical treatment facility) staffs are conducting training in preparation for deployment. All allocated forces should be updated and included in OPLAN medical support annexes.

Logistical Support

One of the greatest challenges in preparing medical asset deployment is dealing with perishable medical supplies which have a finite life span and represent a significant expense in maintaining prepositioned assets and to local medical facilities in the form of War Reserve Materiel (WRM) supplies. This includes the substantial investment in ATH facilities rarely employed and managed in some cases by local facilities. One solution is to centrally manage and maintain EMEDS assemblages in specified locations under contract personnel. Contractors would be responsible for maintaining EMEDS equipment in a ready state and prepare it for shipment upon warning order. Contracts would also be established with medical supply vendors to supply on 24 hour warning notice all perishable products specified by the contract for supplying the EMEDS. Contractors, as AF personnel, will benefit in knowing in advance that a particular EMEDS is in a 90-day window of deployability for the purpose of maintaining adequate stocks. Since two EMEDS are to be kept immediately deployable during the 90-day window, maintaining those in different locations under different contractors would

reduce the possibility that rapid supply requirements would exceed commercial vendors' maintained inventories in a full deployment of both EMEDS. Central locations such as on the West and East coast of the United States, Europe, and Eastern Pacific areas are possible locations for such depots with close locality to major Air Mobility assets.

Deployment

Proper preparation of EMEDS assemblages and equipment for deployment must include continuous review and input from functional experts. A persistent problem in past deployments has been lack of availability of current and up-to-date supplies and equipment. Items selected for inclusion on tables of allowance (TA) must reflect current medical practice and enable medical professionals to provide high quality medical care when called upon. This includes medical equipment that is consistent with standard medical practice and that which personnel are familiar and competent to operate. Outdated or seldom used equipment increases risk of error, particularly in the emergency or mass casualty situations encountered in support of military contingency. Pharmaceuticals supplied must be consistent with current medical practice and readily available for the same reasons. Changing antibiotic resistance patterns for example may preclude the use of once utilitarian antibiotics. Professional recommendations relating to such areas as cardiopulmonary resuscitation or treatment of shock may necessitate changes to newer modes of treatment. To stay abreast of current medical practices, it is imperative that functional area experts be involved in decisions relating to TA preparation. Situations such as changing centrifuge size but failing to take into consideration other related equipment and supplies cannot be allowed to occur due to the greater difficulty of ordering and obtaining replacement once the EMEDS has been

deployed. The only way to prevent such situations is to have equipment selected and exercised by those who are familiar with its use.

A frequent and thorough review process must be established with a streamlined process for resolving discrepancies and changes in standard of care. The Defense Medical Standardization Board, Ft Detrick, MD may be tasked to oversee annual reviews and updates to TA's. Functional experts of all services, chosen from individuals currently practicing in their area of training or expertise should be tasked to participate in such reviews. It is critical that coordination with all services occur on these issues as one service may have logistical control or responsibility for re-supply of deployed medical teams and be responsible for supplying replacement items. When contracts are established with vendors to supply medical items, it is much simpler to make changes to TA items than to make large purchases of items that have little utility. Vendor contracts should be negotiated to allow such changes without imposing additional costs for contract list modifications.

Lastly, individuals assigned to deploy must be familiar with the EMEDS and its assemblages. This is best be accomplished by frequent, realistic training and familiarization with the equipment. A mechanism for after action reports of both exercise and deployment should allow lessons and identified problems to be passed to other medical teams preparing to deploy EMEDS in support of an AEF.

Notes

¹ Ferguson, Bob, Operation Desert Shield and Storm: Air Force Medical Plans and Operations, 25 Nov 91, p. 9

² Wereszynski, Virginia, Ten most critical medical questions, 12 Jan 99

³ DRAFT Concept of Operations For Expeditionary Medical Support (EMEDS) and Air Force Theater Hospitalization (AFTH) Executive Summary, page 1.

⁴ Ibid, pp 1,2

Notes

⁵ Ibid, p 2

⁶ Ibid, pp 10,11

⁷ Ibid, p 14

Conclusions and Summary

This project has reviewed current literature and presentations regarding current thinking on the AEF concept. Additionally, a review of previous deployments, specifically DS/DS and operations in Kenya revealed many positive aspects along with lessons to be learned. Unfortunately details from deployments to Haiti, Bosnia, Zagreb, and Somalia were not available at the writing of this paper but were in initial consideration for inclusion and completeness. The authors are not medical or logistics planners but did receive significant, and greatly appreciated, input from those who are medical and logistics planners.

As with any project of this nature, it is possible to generate as many questions as those initially set out to answer. Suggestions and recommendations have been put forth regarding personnel, logistics, and training issues. Reviewing those same topics yields questions and issues which remaining to be resolved at the planner level and eventually approved by USAF/SG for recommendation to the AF Chief of Staff. During this process all the planners we spoke with demonstrated a keen understanding of the subject matter and their experience and guidance was instrumental in timely completion. These same planners have a unique opportunity to plan the new direction of the AFMS to meet the changing needs of a rapidly deploying force. Gone are the days of intact medical unit deployments where everyone for a major deployment is from a single medical treatment facility.

The key feature woven throughout the recommendations put forth is the issue of functional expert involvement early and often during the planning, building, exercising,

and deploying these new assets. Only with everyone working as a team can we avoid issues like those noted with the centrifuge and test tubes incompatibility. Issues that could prove critical and potentially life threatening if not identified at the earliest opportunity in this process.

Questions remaining include (1) How do we work the issues of assignment with AFPC (Air Force Personnel Center) to lesson the chance that some personnel will be “on the bubble” back-to-back after a recent permanent change of station? (2) How do we systematically include functional experts in TA review and revision? (3) How and where to we exercise and train as a team if everyone assigned to a particular AEF is stationed at numerous locations? (4) How do we ensure accurate and timely dissemination of lessons learned and deployment and exercise experiences? (5) How do we incorporate the AFRC and the ANG in the transition from ATHs and ATC to EMEDS for equipping and training?

The current effort and planning to prepare the AFMS to fully support a restructured expeditionary Air Force appears to be well on the way to dealing with key issues and concerns. The leaders and planners in this process are tackling one of the most challenging issues to face the AFMS since the Air Forces’ inception in 1948. The payoff for this effort may in fact be a life saved or mission accomplished because of a more ready force, prepared to respond to the nation's call.

Glossary

AAR	after action report
ACC	Air Combat Command
ADVON	advance echelon
AE	aeromedical evacuation
AEF	air expeditionary force
AF	Air Force
AFB	Air Force Base
AFMS	Air Force Medical System
AFPC	Air Force Personnel Center
AFRC	Air Force Reserve Command
AFTH	Air Force Theater Hospitalization
AFSC	Air Force Specialty Code
ANG	Air National Guard
AOR	area of responsibility
ARCENT	Army Component Central Command
ASF	Aeromedical Staging Facility
ATC	Air Transportable Clinic
ATH	Air Transportable Hospital
AWV	Air Works Vinnell
BMET	biomedical equipment repair technician
BOS	base operating support
BSC	Biomedical Science Corps
BW	biologic warfare
CENTAF	Air Force Component Central Command
CINC	Commander in Chief
CINCCENTCOM	Commander in Chief, US Central Command
CONHOSP	contingency hospital
CONOPS	concept of operations
CONUS	continental United States
CW	chemical warfare
DS/DS	Operation DESERT SHIELD/DESERT STORM
ECU	environmental control unit
EMEDS	Expeditionary Medical Support
EMEDS+10	EMEDS 10 bed increment

EMEDS+25 ENT	EMEDS 25 bed increment ear, nose, and throat
FOC	full operational capacity
HA HQ	humanitarian assistance Headquarters
IDMT IG IMA IOC ISO	independent duty medical technician Inspector General individual mobilization augmentee initial operational capability international standards organization
JTF	joint task force
LMR LOX	land mobile radio liquid oxygen
MAC MAJCOM MAJCOM/SG MAT MFST MLR MRE MSC MTF MTW	Military Airlift Command Major Command Major Command Surgeon Medical Assessment Team mobile field surgical team management level review meals ready to eat medical service corps medical treatment facility major theater war
NAF NBC NMS NSS	Numbered Air Forces nuclear, biological, chemical National Military Strategy National Security Strategy
OPLAN	operational plan
PSAB	Prince Sultan Air Base
RAM	residency in aerospace medicine
SG SME SP SSC STU-III	Surgeon General squadron medical element Security Police small scale contingency secure telephone unit

SWA	Southwest Asia
TA	table of allowance
TBD	to be determined
US	United States
USAF	United States Air Force
USAID	United States Agency for International Development
USCENTCOM	United States Central Command
UTC	unit type code
WMD	weapons of mass destruction
WRM	war reserve materiel

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